

## Appendix G

### Hydrologic and Hydraulic Analysis

# Pre-Development - with BSS1 Proposed

```

=====
V V I SSSS U U A L (v 6.2.2018)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y M M O O
000 T T H H Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.
    
```

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

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
2066cebd-6b02-49e9-ba3b-4ecd2a197da9\
Summary filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
2066cebd-6b02-49e9-ba3b-4ecd2a197da9\

DATE: 04-10-2024 TIME: 01:34:34

USER:

COMMENTS:
    
```

\*\*\*\*\* SIMULATION : 100yrHope\_SCSII\_6hr.stm \*\*\*\*\*

```

| READ STORM | Filename: C:\Users\jannaormond\AppData\Local\Temp\
    
```

```

PEAK FLOW (cms)= 3.787 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 38.043
TOTAL RAINFALL (mm)= 101.620
RUNOFF COEFFICIENT = 0.374
    
```

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

```

| CALIB |
| STANDHYD ( 5012) | Area (ha)= 37.32
| ID= 1 DT= 5.0 min | Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00
    
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 14.18 23.14
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 498.80 40.00
Mannings n = 0.013 0.250
    
```

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 107.14
over (min) = 5.00 15.00
Storage Coeff. (min)= 5.56 (ii) 14.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
    
```

```

| Ptotal=101.62 mm | d550afd7-b542-4ce9-bff9-b1d2bb7f65fd\ff8cc32c
Comments: Mount Hope-6 hour SCS Distribution Desig
    
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.09	1.50	10.23	3.00	22.51	4.50	6.14
0.17	4.09	1.67	10.23	3.17	22.51	4.67	6.14
0.33	4.09	1.83	10.23	3.33	22.51	4.83	6.14
0.50	6.14	2.00	12.28	3.50	10.23	5.00	4.09
0.67	6.14	2.17	12.28	3.67	10.23	5.17	4.09
0.83	6.14	2.33	12.28	3.83	10.23	5.33	4.09
1.00	6.14	2.50	61.38	4.00	8.18	5.50	4.09
1.17	6.14	2.67	110.48	4.17	8.18	5.67	4.09
1.33	6.14	2.83	159.59	4.33	8.18		

```

| CALIB |
| NASHYD ( 5011) | Area (ha)= 80.20 Curve Number (CN)= 65.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.85
    
```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 3.621

```

Unit Hyd. peak (cms)= 0.20 0.08
*TOTALS*
PEAK FLOW (cms)= 3.73 3.85 6.934 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 43.75 56.20
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.43 0.55
    
```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 5011): 80.20 3.787 3.83 38.04
+ ID2= 2 ( 5012): 37.32 6.934 3.00 56.20
-----
ID = 3 ( 0100): 117.52 7.862 3.00 43.81
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0502) |
| IN= 2---> OUT= 1 | Routing time step (min)= 5.00
    
```

<----- DATA FOR SECTION (1537.5) ----->			
Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	

155.81 88.53 0.1100  
 183.05 88.85 0.1100  
 187.19 88.84 0.1100  
 211.21 88.88 0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

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

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0100)	117.52	7.86	3.00	43.81	1.24
OUTFLOW: ID= 1 ( 0502)	117.52	4.95	3.92	43.81	1.12

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5691)	2.30	69.3
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.07	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.315 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 42.025  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.414

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

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 0575)	0.78	65.00
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 0.51	0.27
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 72.11	40.00
Mannings n = 0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09

0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.500 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 39.092  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.385

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

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5021)	3.67	68.8
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.43	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09

1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 102.89  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 1.74 (ii) 10.33 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.22 0.05 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.267 (iii)  
 RUNOFF VOLUME (mm)= 95.62 51.14 80.04  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.50 0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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)	Dir. Conn.(%)
STANDHYD ( 5082)	0.71	64.00
ID= 1 DT= 5.0 min	Total Imp(%)= 73.00	

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 0.52	0.19
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 68.80	40.00
Mannings n = 0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14

0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.18  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.69 (ii) 9.88 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.11

\*TOTALS\*  
PEAK FLOW (cms)= 0.20 0.04 0.243 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 43.76 76.94  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.43 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 0568)  
ID= 1 DT= 5.0 min  
Area (ha)= 0.53  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.34		0.19
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	59.44		40.00
Mannings n =	0.013		0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 75.62  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.55 (ii) 11.27 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.15 0.02 0.172 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 37.55 75.29  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.37 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0510)  
ID= 1 DT= 5.0 min  
Area (ha)= 0.76  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

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

CALIB  
STANDHYD ( 5092)  
ID= 1 DT= 5.0 min  
Area (ha)= 1.73  
Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.88		0.85
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	107.39		40.00
Mannings n =	0.013		0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.63  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.21 (ii) 10.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.39 0.18 0.542 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 58.31 77.18  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.59		0.17
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	71.18		40.00
Mannings n =	0.013		0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.63  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.73 (ii) 6.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.15

\*TOTALS\*  
PEAK FLOW (cms)= 0.26 0.04 0.307 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 58.31 87.41  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.57 0.86

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.



RUNOFF COEFFICIENT = 0.94 0.57 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 0501) | Area (ha)= 6.23  
ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 2.62 3.61  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 203.00 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 53.82  
over (min) 5.00 15.00

Storage Coeff. (min)= 3.25 (ii) 14.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08  
\*TOTALS\*  
PEAK FLOW (cms)= 1.14 0.35 1.424 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 95.62 31.92 58.67  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.31 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 5282) | Area (ha)= 2.08  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 117.49  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.34 (ii) 10.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09  
\*TOTALS\*  
PEAK FLOW (cms)= 0.60 0.15 0.730 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 58.77 82.72  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.58

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 0481)  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0501): 6.23 1.424 3.00 58.67  
+ ID2= 2 ( 5021): 3.67 0.315 3.33 42.03  
ID = 3 ( 0481): 9.90 1.601 3.00 52.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0481): 9.90 1.601 3.00 52.50  
+ ID2= 2 ( 5082): 0.71 0.243 3.00 76.94  
ID = 1 ( 0481): 10.61 1.844 3.00 54.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0481): 10.61 1.844 3.00 54.14  
+ ID2= 2 ( 5092): 1.73 0.542 3.00 77.18  
ID = 3 ( 0481): 12.34 2.386 3.00 57.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0481): 12.34 2.386 3.00 57.37  
+ ID2= 2 ( 0510): 0.76 0.307 3.00 87.41  
ID = 1 ( 0481): 13.10 2.693 3.00 59.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0481): 13.10 2.693 3.00 59.11  
+ ID2= 2 ( 5282): 2.08 0.730 3.00 82.72  
ID = 3 ( 0481): 15.18 3.423 3.00 62.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0481): 15.18 3.423 3.00 62.35  
+ ID2= 2 ( 0568): 0.53 0.172 3.00 75.29  
ID = 1 ( 0481): 15.71 3.595 3.00 62.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	15.71	3.595	3.00	62.78
+ ID2= 2 ( 5691):	2.30	0.500	3.00	39.09
-----				
ID = 3 ( 0481):	18.01	4.095	3.00	59.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	18.01	4.095	3.00	59.76
+ ID2= 2 ( 0575):	0.78	0.267	3.00	80.04
-----				
ID = 1 ( 0481):	18.79	4.362	3.00	60.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	7.22	Curve Number (CN)=	80.7
NASHYD ( 0524)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.20		

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09

1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 1.440 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 56.609  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.557

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

CALIB	Area (ha)=	3.31	Curve Number (CN)=	63.1
NASHYD ( 0522)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.16		

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.454 (i)  
 TIME TO PEAK (hrs)= 3.000

RUNOFF VOLUME (mm)= 35.995  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.354

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

CALIB	Area (ha)=	1.87	Dir. Conn.(%)=	65.00
STANDHYD ( 0580)	Total Imp(%)=	65.00		
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	1.22	0.65		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	111.65	40.00		
Mannings n =	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 75.62  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.26 (ii) 11.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.54 0.08 0.604 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 37.55 75.29  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.37 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	2.08	Dir. Conn.(%)=	65.00
STANDHYD ( 0519)	Total Imp(%)=	65.00		
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	1.35	0.73		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	117.76	40.00		
Mannings n =	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		

1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.34 (ii) 12.21 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.60 0.09 0.668 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 74.80  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.40 0.40  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 109.54 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09

0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09  
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.24 (ii) 6.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*  
PEAK FLOW (cms)= 0.62 0.06 0.682 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 82.53  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0298)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0519):	2.08	0.668	3.00	74.80
+ ID2= 2 ( 0529):	1.80	0.682	3.00	82.53
-----				
ID = 3 ( 0298):	3.88	1.349	3.00	78.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0298)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0298):	3.88	1.349	3.00	78.39
+ ID2= 2 ( 0580):	1.87	0.604	3.00	75.29

ID = 1 ( 0298): 5.75 1.953 3.00 77.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0296)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0298):	5.75	1.953	3.00	77.38
+ ID2= 2 ( 0522):	3.31	0.454	3.00	35.99
-----				
ID = 3 ( 0296):	9.06	2.407	3.00	62.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0523) | Area (ha)= 6.61  
ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.96 1.65  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 209.92 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09

1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 216.34  
over (min) 5.00 10.00  
Storage Coeff. (min)= 3.31 (ii) 9.69 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.26 0.11

\*TOTALS\*  
PEAK FLOW (cms)= 1.44 0.70 2.137 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 55.38 75.50  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.55 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0291)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0296):	9.06	2.407	3.00	62.26
+ ID2= 2 ( 0523):	6.61	2.137	3.00	75.50
-----				
ID = 3 ( 0291):	15.67	4.544	3.00	67.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0525) | Area (ha)= 1.45  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.94 0.51  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 98.32 40.00  
Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 101.73  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.10 (ii) 10.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.42 0.09 0.494 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 95.62 50.55 79.84  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.50 0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0304)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 275.07  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.19 (ii) 7.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.13

\*TOTALS\*

PEAK FLOW (cms)= 0.39 0.24 0.626 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 72.75 84.64  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.72 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0301)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0295):	24.34	6.389	3.00	65.23
+ ID2= 2 ( 0527):	1.68	0.626	3.00	84.64
ID = 3 ( 0301):	26.02	7.015	3.00	66.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	STANDHYD ( 0520)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		2.27	61.00	61.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	1.38	0.89
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	123.02	40.00
Mannings n =	0.013	0.250

ID1= 1 ( 0291):	15.67	4.544	3.00	67.85
+ ID2= 2 ( 0525):	1.45	0.494	3.00	79.84
ID = 3 ( 0304):	17.12	5.038	3.00	68.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0295)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0304):	17.12	5.038	3.00	68.86
+ ID2= 2 ( 0524):	7.22	1.440	3.00	56.61
ID = 3 ( 0295):	24.34	6.389	3.00	65.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	STANDHYD ( 0527)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		1.68	76.00	52.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	1.28	0.40
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	105.83	40.00
Mannings n =	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 107.32  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.40 (ii) 10.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.61 0.17 0.753 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 95.62 53.41 79.16  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0305)
-----------------

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0301):	26.02	7.015	3.00	66.48
+ ID2= 2 ( 0520):	2.27	0.753	3.00	79.16
-----				
ID = 3 ( 0305):	28.29	7.768	3.00	67.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0445)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1400	0.8343
	0.0195	0.2416	0.2360	1.0014
	0.0700	0.5564	0.3420	1.6616

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0305)	28.290	7.768	3.00	67.50
OUTFLOW: ID= 1 ( 0445)	28.290	0.328	5.17	67.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.22  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.5752

CALIB				
STANDHYD ( 0526)	Area (ha)=	0.94		
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)=	78.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.73	0.21		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	79.16	40.00		
Mannings n =	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14

0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)=	159.59	107.62	
over (min)	5.00	10.00	
Storage Coeff. (min)=	1.84 (ii)	6.19 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.32	0.15	
PEAK FLOW (cms)=	0.32	0.05	*TOTALS*
TIME TO PEAK (hrs)=	3.00	3.00	0.374 (iii)
RUNOFF VOLUME (mm)=	95.62	53.57	86.37
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.53	0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0310)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0476	0.0432
	0.0096	0.0220	0.0579	0.0480
	0.0206	0.0306	0.0671	0.0528
	0.0297	0.0360	0.0000	0.0000
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0526)	0.940	0.374	3.00	86.37
OUTFLOW: ID= 1 ( 0310)	0.940	0.064	3.25	85.75

TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	95.62	45.03	84.49
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.44	0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0307)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0730	0.0642
	0.0150	0.0327	0.0890	0.0712
	0.0310	0.0455	0.1030	0.0784
	0.0450	0.0536	0.0000	0.0000
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0574)	1.440	0.559	3.00	84.49
OUTFLOW: ID= 1 ( 0307)	1.440	0.099	3.25	84.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.76  
 TIME SHIFT OF PEAK FLOW (min)= 15.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0766

ADD HYD ( 0306)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0307):	1.44	0.099	3.25	84.10
+ ID2= 2 ( 0310):	0.94	0.064	3.25	85.75
-----				
ID = 3 ( 0306):	2.38	0.164	3.25	84.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0571)	Area (ha)=	19.59		
ID= 1 DT= 5.0 min	Total Imp(%)=	68.00	Dir. Conn.(%)=	50.00

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.21  
 TIME SHIFT OF PEAK FLOW (min)= 15.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0514

CALIB				
STANDHYD ( 0574)	Area (ha)=	1.44		
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)=	78.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	1.12	0.32		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	97.98	40.00		
Mannings n =	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)=	159.59	90.76	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.09 (ii)	6.44 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.31	0.14	
PEAK FLOW (cms)=	0.50	0.06	*TOTALS*
			0.559 (iii)

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 13.32 6.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 361.39 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 151.76  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.58 (ii) 11.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.09

PEAK FLOW (cms)= 4.17 1.61 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 5.53 (iii)  
 RUNOFF VOLUME (mm)= 95.62 49.14 72.38  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.48 0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.6 Ia = Dep. 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 ( 0572) | Area (ha)= 11.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.03 3.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 274.59 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 218.54  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.88 (ii) 10.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09

PEAK FLOW (cms)= 2.44 1.33 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 3.610 (iii)  
 RUNOFF VOLUME (mm)= 95.62 65.60 80.61

TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.65 0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0314)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0571): 19.59 5.535 3.00 72.38  
 + ID2= 2 ( 0572): 11.31 3.610 3.00 80.61  
 =====  
 ID = 3 ( 0314): 30.90 9.144 3.00 75.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 CALIB  
 STANDHYD ( 0573) | Area (ha)= 2.66  
 ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.00 1.06  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 133.17 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09

0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09  
 0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09  
 0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
 1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
 1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 98.49  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.52 (ii) 11.26 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.70 0.18 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.855 (iii)  
 RUNOFF VOLUME (mm)= 95.62 48.91 76.93  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.48 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.8 Ia = Dep. 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 ( 0317)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0314): 30.90 9.144 3.00 75.39  
 + ID2= 2 ( 0573): 2.66 0.855 3.00 76.93  
 =====  
 ID = 3 ( 0317): 33.56 10.000 3.00 75.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 RESERVOIR( 0446) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1 |  
DT= 5.0 min
 (cms) (ha.m.) | (cms) (ha.m.)  
 0.0000 0.0000 | 0.2300 1.1312

0.0230 0.3704 | 0.2810 1.3850  
 0.0900 0.8066 | 0.4120 2.2335

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0317)	33.560	10.000	3.00	75.51
OUTFLOW: ID= 1 ( 0446)	33.560	0.395	5.25	74.78

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.95  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 2.1254

ADD HYD ( 0102)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	83.02	4.874	3.00	69.29
+ ID2= 2 ( 0502):	117.52	4.947	3.92	43.81
ID = 1 ( 0102):	200.54	7.662	3.00	54.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2---> OUT= 1

Routing time step (min)'= 5.00

DATA FOR SECTION (1157.9)

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89

ADD HYD ( 0102)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0306):	2.38	0.164	3.25	84.76
+ ID2= 2 ( 0445):	28.29	0.328	5.17	67.26
ID = 3 ( 0102):	30.67	0.460	3.58	68.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	30.67	0.460	3.58	68.61
+ ID2= 2 ( 0446):	33.56	0.395	5.25	74.78
ID = 1 ( 0102):	64.23	0.829	3.92	71.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0102):	64.23	0.829	3.92	71.83
+ ID2= 2 ( 0481):	18.79	4.362	3.00	60.60
ID = 3 ( 0102):	83.02	4.874	3.00	69.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	200.54	7.66	3.00	54.36	1.43	1.18
OUTFLOW: ID= 1 ( 0503)	200.54	6.81	3.08	54.36	1.36	1.14

CALIB  
 NASHYD ( 5031)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.70  
 Curve Number (CN)= 71.0  
 Ia (mm)= 8.00  
 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.82

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.079

PEAK FLOW (cms)= 0.096 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 44.407  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.437

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

CALIB  
 STANDHYD ( 5032)  
 ID= 1 DT= 5.0 min

Area (ha)= 12.20  
 Total Imp(%)= 59.00  
 Dir. Conn.(%)= 47.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	7.20	5.00
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	285.19	40.00
Mannings n =	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 133.17

over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.97 (ii) 11.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 2.47 1.14 3.440 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 51.84 72.41  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.51 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5031):	1.70	0.096	3.83	44.41
+ ID2= 2 ( 5032):	12.20	3.440	3.00	72.41
ID = 3 ( 0103):	13.90	3.465	3.00	68.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0103):	13.90	3.465	3.00	68.99
+ ID2= 2 ( 0503):	200.54	6.814	3.08	54.36
ID = 3 ( 0104):	214.44	9.895	3.00	55.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1  
 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 815.4) ----->  
 Distance Elevation Manning

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.89

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

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.013

PEAK FLOW (cms)= 0.015 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 41.113  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.405

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

CALIB  
 STANDHYD ( 5042) Area (ha)= 7.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
19.10	82.03	0.0900			
29.01	83.14	0.0900			
40.83	82.56	0.0900			
81.51	82.27	0.0900			
122.18	82.68	0.0900			
169.31	82.61	0.0900			
217.10	82.90	0.0900			
229.61	83.66	0.0900 / 0.0700			Main Channel
232.80	81.85	0.0700			Main Channel
243.24	83.87	0.0700			Main Channel
257.77	84.06	0.0900			
312.01	83.52	0.0900			
415.18	83.86	0.0900			
461.15	83.40	0.0900			
501.83	83.53	0.0900			
513.93	82.96	0.0900			
526.85	83.23	0.0900			
569.63	83.21	0.0900			
610.76	83.63	0.0900			
663.54	83.88	0.0900			

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<---- hydrograph ----> <-pipe / channel-->  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
 INFLOW : ID= 2 ( 0104) 214.44 9.90 3.00 55.30 0.84 0.35  
 OUTFLOW : ID= 1 ( 0504) 214.44 7.50 3.25 55.30 0.80 0.34

IMPERVIOUS PVIOUS (i)  
 Surface Area (ha)= 4.88 2.52  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 222.11 40.00  
 Mannings n = 0.013 0.250

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

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 133.73  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 3.42 (ii) 11.16 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.74 0.58 2.236 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 49.77 74.53  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.49 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5041):	0.30	0.015	3.92	41.11
+ ID2= 2 ( 5042):	7.40	2.236	3.00	74.53
=====				
ID = 3 ( 0105):	7.70	2.240	3.00	73.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0105):	7.70	2.240	3.00	73.22
+ ID2= 2 ( 0504):	214.44	7.501	3.25	55.30
=====				
ID = 3 ( 0106):	222.14	8.306	3.17	55.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	NASHYD ( 5211)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min		1.90	77.0
	Ia (mm)	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)	0.95	

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09

1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.076  
 PEAK FLOW (cms)= 0.113 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 51.711  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.509

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

CALIB	STANDHYD ( 5212)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		13.80	52.00	40.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 7.18 6.62  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 143.83  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.12 (ii) 11.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 2.37 1.65 3.795 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 58.15 73.14  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.57 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.113	3.92	51.71
+ ID2= 2 ( 5212):	13.80	3.795	3.00	73.14
=====				
ID = 3 ( 0112):	15.70	3.821	3.00	70.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0106):	222.14	8.306	3.17	55.92
+ ID2= 2 ( 0112):	15.70	3.821	3.00	70.55
=====				
ID = 3 ( 0114):	237.84	11.803	3.00	56.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2----> OUT= 1  
 Routing time step (min)\*= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 /0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 /0.0900
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900
501.51	83.16	0.0900

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0114) 237.84 11.80 3.00 56.89 0.81 0.56
OUTFLOW: ID= 1 ( 0505) 237.84 11.04 3.08 56.89 0.78 0.55

```

```

CALIB
STANDHYD ( 5052) Area (ha)= 14.60
ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 9.64 4.96
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 311.98 40.00
Mannings n = 0.013 0.250

```

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

```

CALIB
NASHYD ( 5051) Area (ha)= 1.30 Curve Number (CN)= 68.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.62

```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.080

```

PEAK FLOW (cms) = 0.084 (i)
TIME TO PEAK (hrs) = 3.583
RUNOFF VOLUME (mm) = 41.118
TOTAL RAINFALL (mm) = 101.620
RUNOFF COEFFICIENT = 0.405

```

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 133.73
over (min) = 5.00 15.00
Storage Coeff. (min) = 4.19 (ii) 11.93 (iii)
Unit Hyd. Tpeak (min) = 5.00 15.00
Unit Hyd. peak (cms) = 0.24 0.09

```

\*TOTALS\*

```

PEAK FLOW (cms) = 3.39 1.12 4.336 (iii)
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 95.62 49.77 74.53
TOTAL RAINFALL (mm) = 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.49 0.73

```

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0501): 1.30 0.084 3.58 41.12
+ ID2= 2 ( 0502): 14.60 4.336 3.00 74.53
=====
ID = 3 ( 0107): 15.90 4.367 3.00 71.80

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ADD HYD ( 0108)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0107): 15.90 4.367 3.00 71.80
+ ID2= 2 ( 0505): 237.84 11.037 3.08 56.89
=====
ID = 3 ( 0108): 253.74 14.334 3.00 57.82

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ROUTE CHN( 0506)
IN= 2----> OUT= 1 Routing time step (min)= 5.00

```

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700

200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0108) 253.74 14.33 3.00 57.82 1.73 0.96
OUTFLOW: ID= 1 ( 0506) 253.74 12.85 3.17 57.82 1.68 1.03

```

```

CALIB
NASHYD ( 5061) Area (ha)= 3.90 Curve Number (CN)= 71.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.62

```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.239

PEAK FLOW (cms) = 0.273 (i)  
 TIME TO PEAK (hrs) = 3.583  
 RUNOFF VOLUME (mm) = 44.407  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.437

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

CALIB  
 STANDHYD ( 5062)  
 ID= 1 DT= 5.0 min

Area (ha) = 7.80  
 Total Imp(%) = 65.00 Dir. Conn.(%) = 53.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	5.07	2.73
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	228.04	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 140.91  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 3.47 (ii) 11.05 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.26 0.09

PEAK FLOW (cms) = 1.80 0.67 2.375 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 95.62 52.92 75.55  
 TOTAL RAINFALL (mm) = 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.52 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5061):	3.90	0.273	3.58	44.41
+ ID2= 2 ( 5062):	7.80	2.375	3.00	75.55

ID = 3 ( 0109): 11.70 2.477 3.00 65.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	11.70	2.477	3.00	65.17
+ ID2= 2 ( 0506):	253.74	12.847	3.17	57.82
ID = 3 ( 0110):	265.44	14.024	3.08	58.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5101)  
 ID= 1 DT= 5.0 min

Area (ha) = 0.80 Curve Number (CN) = 66.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.42

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.022

PEAK FLOW (cms) = 0.026 (i)  
 TIME TO PEAK (hrs) = 4.583  
 RUNOFF VOLUME (mm) = 39.043  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.384

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

CALIB  
 STANDHYD ( 5102)  
 ID= 1 DT= 5.0 min

Area (ha) = 0.90  
 Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.45	0.45
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	77.46	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 120.33  
 over (min) = 5.00 10.00  
 Storage Coeff. (min) = 1.82 (ii) 9.89 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 10.00

Unit Hyd. peak (cms)= 0.32 0.11  
 PEAK FLOW (cms)= 0.14 0.10  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 95.62 46.47  
 TOTAL RAINFALL (mm)= 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.46

\*TOTALS\*  
 0.241 (iii)  
 0.63

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)  
 1 + 2 = 3  
 ID1= 1 ( 5101): AREA 0.80 QPEAK 0.026 TPEAK 4.58 R.V. 39.04  
 + ID2= 2 ( 5102): AREA 0.90 QPEAK 0.241 TPEAK 3.00 R.V. 63.67  
 ID = 3 ( 0115): AREA 1.70 QPEAK 0.244 TPEAK 3.00 R.V. 52.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91

0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.129  
 PEAK FLOW (cms)= 0.128 (i)  
 TIME TO PEAK (hrs)= 3.500  
 RUNOFF VOLUME (mm)= 40.070  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.394

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

CALIB  
 STANDHYD ( 5112) Area (ha)= 1.10  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.55 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 85.63 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09

0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

hydrograph  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0115) 1.70 0.24 3.00 52.08 0.05 0.24  
 OUTFLOW: ID= 1 ( 0511) 1.70 0.18 3.08 52.08 0.03 0.24

CALIB  
 NASHYD ( 5111) Area (ha)= 1.90 Curve Number (CN)= 67.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.56

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09

1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 134.29  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.93 (ii) 9.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.11

\*TOTALS\*  
 PEAK FLOW (cms)= 0.17 0.14 0.313 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 52.00 67.26  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.51 0.66

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0116)  
 1 + 2 = 3  
 ID1= 1 ( 5111): AREA 1.90 QPEAK 0.128 TPEAK 3.50 R.V. 40.07  
 + ID2= 2 ( 5112): AREA 1.10 QPEAK 0.313 TPEAK 3.00 R.V. 67.26  
 ID = 3 ( 0116): AREA 3.00 QPEAK 0.366 TPEAK 3.00 R.V. 50.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)  
 1 + 2 = 3  
 ID1= 1 ( 0116): AREA 3.00 QPEAK 0.366 TPEAK 3.00 R.V. 50.04  
 + ID2= 2 ( 0511): AREA 1.70 QPEAK 0.175 TPEAK 3.08 R.V. 52.08  
 ID = 3 ( 0117): AREA 4.70 QPEAK 0.533 TPEAK 3.00 R.V. 50.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) |  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.51	14.57
1.06	80.77	.873E+04	4.6	0.75	10.64
1.19	80.90	.179E+05	11.4	1.00	8.40
1.32	81.04	.278E+05	22.6	1.36	6.14
1.46	81.17	.381E+05	37.5	1.83	4.83
1.60	81.31	.484E+05	55.4	2.47	3.67
1.74	81.45	.588E+05	76.0	3.33	2.83
1.87	81.59	.693E+05	99.3	4.47	2.25
2.01	81.72	.798E+05	125.0	5.93	1.75
2.15	81.86	.903E+05	153.1	7.80	1.36
2.29	82.00	.101E+06	183.5	10.46	1.06
2.42	82.14	.112E+06	214.3	14.17	0.81
2.56	82.27	.123E+06	244.4	18.40	0.64

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0117)	4.70	0.53	3.00	50.78	0.64	0.41
OUTFLOW: ID= 1 ( 0512)	4.70	0.32	3.25	50.77	0.54	0.36

Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 146.06 40.00  
Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 138.15  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 2.66 (ii) 10.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.66 0.32 0.934 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 52.54 72.79  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.52 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 |  
NASHYD ( 5121) | Area (ha)= 0.70 Curve Number (CN)= 71.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.14

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.031 (i)  
TIME TO PEAK (hrs)= 4.167  
RUNOFF VOLUME (mm)= 44.405  
TOTAL RAINFALL (mm)= 101.620  
RUNOFF COEFFICIENT = 0.437

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

CALIB |  
STANDHYD ( 5122) | Area (ha)= 3.20  
ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

Surface Area (ha)= IMPERVIOUS 1.92 PERVIOUS (i) 1.28

ADD HYD ( 0118) |  
1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5121):	0.70	0.031	4.17	44.40
+ ID2= 2 ( 5122):	3.20	0.934	3.00	72.79
=====				
ID = 3 ( 0118):	3.90	0.939	3.00	67.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119) |  
1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):	3.90	0.939	3.00	67.69
+ ID2= 2 ( 0512):	4.70	0.324	3.25	50.77
=====				
ID = 3 ( 0119):	8.60	1.194	3.00	58.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120) |  
1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):	265.44	14.024	3.08	58.14
+ ID2= 2 ( 0119):	8.60	1.194	3.00	58.44
=====				
ID = 3 ( 0120):	274.04	14.840	3.08	58.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |  
NASHYD ( 6011) | Area (ha)= 44.10 Curve Number (CN)= 62.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.83

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14

0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 2.027

PEAK FLOW (cms) = 1.942 (i)  
 TIME TO PEAK (hrs) = 3.833  
 RUNOFF VOLUME (mm) = 35.157  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.346

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

CALIB  
 STANDHYD ( 6012)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 11.00  
 Total Imp(%) = 28.00 Dir. Conn.(%) = 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 3.08 7.92  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 270.80 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14

0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 91.88  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 3.85 (ii) 12.84 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.25 0.08

\*TOTALS\*  
 PEAK FLOW (cms) = 0.76 1.16 1.726 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 95.62 39.35 48.35  
 TOTAL RAINFALL (mm) = 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.39 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6011):	44.10	1.942	3.83	35.16
+ ID2= 2 ( 6012):	11.00	1.726	3.00	48.35
-----				
ID = 3 ( 0124):	55.10	2.327	3.50	37.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6021)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 43.60 Curve Number (CN) = 62.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.95

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 1.753

PEAK FLOW (cms) = 1.734 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 35.157  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.346

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

CALIB  
 STANDHYD ( 6022)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 12.90  
 Total Imp(%) = 35.00 Dir. Conn.(%) = 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 4.51 8.38

Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 293.26 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 94.24  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 4.04 (ii) 12.94 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms) = 1.28 1.26 2.325 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 95.62 39.77 52.62  
 TOTAL RAINFALL (mm) = 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.39 0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

274.11 91.86 0.1400

TRAVEL TIME TABLE					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

		<--- hydrograph --->				<-pipe / channel-->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW : ID= 2 ( 0126)	111.60	4.89	3.00	38.48	0.71	0.25	
OUTFLOW : ID= 1 ( 0603)	111.60	3.29	4.50	38.47	0.66	0.23	

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6031)	19.00	72.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 1.32	

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14

0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)=	159.59	118.78
over (min)	5.00	15.00
Storage Coeff. (min)	3.82 (ii)	11.93 (ii)
Unit Hyd. Tpeak (min)	5.00	15.00
Unit Hyd. peak (cms)	0.25	0.09
*TOTALS*		
PEAK FLOW (cms)	0.70	1.55
TIME TO PEAK (hrs)	3.00	3.08
RUNOFF VOLUME (mm)	95.62	50.39
TOTAL RAINFALL (mm)	101.62	101.62
RUNOFF COEFFICIENT	0.94	0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 72.0 Ia = Dep. 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 ( 0127)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.771	4.42	45.55
+ ID2= 2 ( 6032):	10.73	2.007	3.00	57.17
=====				
ID = 3 ( 0127):	29.73	2.110	3.00	49.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

ADD HYD ( 0125)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6021):	43.60	1.734	4.00	35.16
+ ID2= 2 ( 6022):	12.90	2.325	3.00	52.62
=====				
ID = 3 ( 0125):	56.50	2.680	3.00	39.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	2.327	3.50	37.79
+ ID2= 2 ( 0125):	56.50	2.680	3.00	39.14
=====				
ID = 3 ( 0126):	111.60	4.886	3.00	38.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)	
IN= 2--> OUT= 1	Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	

0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)	= 0.771 (i)
TIME TO PEAK (hrs)	= 4.417
RUNOFF VOLUME (mm)	= 45.555
TOTAL RAINFALL (mm)	= 101.620
RUNOFF COEFFICIENT	= 0.448

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

CALIB			
STANDHYD ( 6032)	Area (ha)	Dir. Conn.(%)	
ID= 1 DT= 5.0 min	10.73	28.00	15.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	3.00	7.73
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	267.46	40.00
Mannings n	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14

| NASHYD ( 6131) | Area (ha)= 1.77 Curve Number (CN)= 66.0  
 |ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.22

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.220 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 38.999  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.384

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

| CALIB |  
 | STANDHYD ( 6222) | Area (ha)= 2.02  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.58	0.44
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	116.05	40.00

Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 86.94  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.32 (ii) 6.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.14

	(i)	(ii)	*TOTALS*
PEAK FLOW (cms)=	0.70	0.08	0.779 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	95.62	43.13	84.07
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.42	0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 6142) | Area (ha)= 1.50  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.04	0.47
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	100.00	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 157.45  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.12 (ii) 9.37 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.12

	(i)	(ii)	*TOTALS*
PEAK FLOW (cms)=	0.33	0.14	0.474 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	95.62	49.44	72.53
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.49	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

- CN\* = 63.0 Ia = Dep. 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 ( 6152) | Area (ha)= 2.14  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.67	0.47
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	119.44	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 86.94  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.36 (ii) 6.70 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.14

	(i)	(ii)	*TOTALS*
PEAK FLOW (cms)=	0.74	0.09	0.824 (iii)



TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 43.13 84.07  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.42 0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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 ( 6182) | Area (ha)= 1.49  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.16 0.33  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 99.67 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 259.23  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.11 (ii) 8.05 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.13

PEAK FLOW (cms)= 0.33 0.18 0.507 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 58.82 77.22  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.58 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.81 0.05  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.72 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 1.79 (ii) 4.19 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.32 0.24

PEAK FLOW (cms)= 0.36 0.01 0.368 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 36.14 92.05  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.36 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6172) | Area (ha)= 2.31  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14

Max.Eff.Inten.(mm/hr)= 159.59 286.12  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.41 (ii) 8.12 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.13

PEAK FLOW (cms)= 0.51 0.31 0.818 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 65.65 80.63  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.65 0.79

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0342) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6142): 1.50 0.474 3.00 72.53  
 + ID2= 2 ( 6152): 2.14 0.824 3.00 84.07  
 =====  
 ID = 3 ( 0342): 3.64 1.298 3.00 79.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0342):	3.64	1.298	3.00	79.31
+ ID2= 2 ( 6172):	2.31	0.818	3.00	80.63
=====				
ID = 1 ( 0342):	5.95	2.116	3.00	79.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	5.95	2.116	3.00	79.83
+ ID2= 2 ( 6182):	1.49	0.507	3.00	77.22
=====				
ID = 3 ( 0342):	7.44	2.623	3.00	79.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0342):	7.44	2.623	3.00	79.30
+ ID2= 2 ( 6222):	2.02	0.779	3.00	84.07
=====				
ID = 1 ( 0342):	9.46	3.402	3.00	80.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	9.46	3.402	3.00	80.32
+ ID2= 2 ( 6302):	0.86	0.368	3.00	92.05
=====				
ID = 3 ( 0342):	10.32	3.770	3.00	81.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

STANDHYD ( 6212) Area (ha)= 1.15  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.75 0.40  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 87.56 40.00  
Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	6.083	4.09	1.583	10.23
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14	6.167	4.09	1.667	10.23
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14	6.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14	6.333	4.09	1.833	10.23
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14	6.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14	6.500	4.09	2.000	10.23
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09	6.583	6.14	2.083	12.28
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09	6.667	6.14	2.167	12.28
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09	6.750	6.14	2.250	12.28
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09	6.833	6.14	2.333	12.28
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09	6.917	6.14	2.417	12.28
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09	7.000	6.14	2.500	12.28
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09	7.083	6.14	2.583	61.38
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09	7.167	6.14	2.667	61.38
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09	7.250	6.14	2.750	110.48
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09	7.333	6.14	2.833	110.48
1.417	6.14	2.917	159.59	4.417	8.18			7.417	6.14	2.917	159.59
1.500	6.14	3.000	159.59	4.500	8.18			7.500	6.14	3.000	159.59

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.96 (ii) 11.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.33 0.05 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.370 (iii)  
RUNOFF VOLUME (mm)= 95.62 36.14 74.80  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 63.0 Ia = Dep. 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 ( 6232)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	Dir. Conn.(%)=	
	0.85		65.00	
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	0.55	0.30		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	75.28	40.00		
Mannings n =	0.013	0.250		

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

--- TRANSFORMED HYETOGRAPH ---											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	6.083	4.09	1.583	10.23
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14	6.167	4.09	1.667	10.23
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14	6.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14	6.333	4.09	1.833	10.23
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14	6.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14	6.500	4.09	2.000	10.23
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09	6.583	6.14	2.083	12.28
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09	6.667	6.14	2.167	12.28
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09	6.750	6.14	2.250	12.28
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09	6.833	6.14	2.333	12.28
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09	6.917	6.14	2.417	12.28
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09	7.000	6.14	2.500	12.28
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09	7.083	6.14	2.583	61.38
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09	7.167	6.14	2.667	61.38
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09	7.250	6.14	2.750	110.48
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09	7.333	6.14	2.833	110.48
1.417	6.14	2.917	159.59	4.417	8.18			7.417	6.14	2.917	159.59
1.500	6.14	3.000	159.59	4.500	8.18			7.500	6.14	3.000	159.59

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.79 (ii) 11.66 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.24 0.04 \*TOTALS\*  
0.274 (iii)

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 74.79  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6262)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	Dir. Conn.(%)=	
	0.96		60.00	
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	0.58	0.38		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	80.00	40.00		
Mannings n =	0.013	0.250		

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

--- TRANSFORMED HYETOGRAPH ---											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	6.083	4.09	1.583	10.23
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14	6.167	4.09	1.667	10.23
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14	6.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14	6.333	4.09	1.833	10.23
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14	6.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14	6.500	4.09	2.000	10.23

0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 109.06  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.85 (ii) 10.25 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.25 0.08  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 95.62 54.32  
TOTAL RAINFALL (mm)= 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53

\*TOTALS\*  
0.319 (iii)  
0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0346)				
1 + 2 = 3				
ID1= 1 ( 0342):	10.32	3.770	3.00	81.30
+ ID2= 2 ( 0488):	2.00	0.645	3.00	74.80
=====				
ID = 3 ( 0346):	12.32	4.414	3.00	80.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)				
3 + 2 = 1				
AREA	QPEAK	TPEAK	R.V.	

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) 5.00 5.00  
Storage Coeff. (min)= 2.01 (ii) 4.41 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.31 0.23

\*TOTALS\*  
0.539 (iii)  
0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0491)			
IN= 2--> OUT= 1			
DT= 5.0 min			
OUTFLOW	STORAGE	OUTFLOW	STORAGE

-----			
	(ha)	(cms)	(hrs) (mm)
ID1= 3 ( 0346):	12.32	4.414	3.00 80.24
+ ID2= 2 ( 6131):	1.77	0.220	3.08 39.00
=====			
ID = 1 ( 0346):	14.09	4.606	3.00 75.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)			
1 + 2 = 3			
AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0346):	14.09	4.606	3.00 75.06
+ ID2= 2 ( 6262):	0.96	0.319	3.00 79.09
=====			
ID = 3 ( 0346):	15.05	4.925	3.00 75.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0447)			
IN= 2--> OUT= 1			
DT= 5.0 min			
OVERFLOW IS OFF			
OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1070	0.3146
0.0150	0.1715	0.7100	0.8031

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0346):	15.050	4.925	3.00 75.32
OUTFLOW : ID= 1 ( 0447):	15.050	0.656	3.58 75.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.32  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.7608

CALIB	
STANDHYD ( 6202)	
ID= 1 DT= 5.0 min	
Area (ha)=	1.26
Total Imp(%)=	94.00
Dir. Conn.(%)=	94.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.18	0.08	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	91.65	40.00	
Mannings n =	0.013	0.250	

-----			
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.0580	0.0848
0.0090	0.0366	0.0000	0.0000

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 6202):	1.260	0.539	3.00 92.05
OUTFLOW : ID= 1 ( 0491):	1.260	0.056	3.58 91.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.35  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0829

CALIB	
STANDHYD ( 6062)	
ID= 1 DT= 5.0 min	
Area (ha)=	1.98
Total Imp(%)=	65.00
Dir. Conn.(%)=	65.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.29	0.69	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	114.89	40.00	
Mannings n =	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.30 (ii) 12.17 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.57 0.08 0.636 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 74.80  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6122) | Area (ha)= 2.18  
ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 2.05 0.13  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 120.55 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09

0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) 5.00 5.00  
Storage Coeff. (min)= 2.37 (ii) 4.77 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.30 0.22

\*TOTALS\*  
PEAK FLOW (cms)= 0.90 0.03 0.930 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 92.05  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.91

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 1000) | OVERFLOW IS OFF  
IN= 2----> OUT= 1 |  
DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
INFLOW : ID= 2 ( 6122) 2.180 0.930 3.00 92.05  
OUTFLOW: ID= 1 ( 1000) 2.180 0.096 3.58 91.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.37  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.1433

ADD HYD ( 0493)  
1 + 2 = 3 |

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1000):	2.18	0.096	3.58 91.59
+ ID2= 2 ( 0491):	1.26	0.056	3.58 91.24
=====			
ID = 3 ( 0493):	3.44	0.152	3.58 91.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)  
3 + 2 = 1 |

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0493):	3.44	0.152	3.58 91.46
+ ID2= 2 ( 0062):	1.98	0.636	3.00 74.80
=====			
ID = 1 ( 0493):	5.42	0.752	3.00 85.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0319)  
IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29

0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

<---- hydrograph ----> <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0493) 5.42 0.75 3.00 85.37 0.26 0.76  
OUTFLOW: ID= 1 ( 0319) 5.42 0.41 3.08 85.36 0.20 0.66

CALIB  
STANDHYD ( 6162) | Area (ha)= 0.44  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.10  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 54.16 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09

0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 109.06  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.47 (ii) 5.81 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.33 0.15

PEAK FLOW (cms)= 0.15 0.02 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.176 (iii)  
RUNOFF VOLUME (mm)= 95.62 54.32 86.53  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53 0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102) Area (ha)= 2.49  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.94	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	128.84	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 109.06  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.81 (ii) 6.16 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.15

PEAK FLOW (cms)= 0.31 0.05 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.355 (iii)  
RUNOFF VOLUME (mm)= 95.62 54.32 86.53  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53 0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0489)  
1 + 2 = 3 AREA QPEAK TPEAK R.V.

0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 321.04  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.47 (ii) 7.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.13

PEAK FLOW (cms)= 0.55 0.38 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.933 (iii)  
RUNOFF VOLUME (mm)= 95.62 75.63 85.63  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.74 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 6242) Area (ha)= 0.89  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.69	0.20
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	77.03	40.00
Mannings n =	0.013	0.250

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6102):	2.49	0.933	3.00	85.63
+ ID2= 2 ( 6162):	0.44	0.176	3.00	86.53
-----	-----	-----	-----	-----
ID = 3 ( 0489):	2.93	1.109	3.00	85.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489)  
3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0489):	2.93	1.109	3.00	85.76
+ ID2= 2 ( 6242):	0.89	0.355	3.00	86.53
-----	-----	-----	-----	-----
ID = 1 ( 0489):	3.82	1.464	3.00	85.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0490) OVERFLOW IS OFF  
IN= 2----> OUT= 1  
DT= 5.0 min

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1760	0.2330
0.0280	0.0927	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0489)	3.820	1.464	3.00	85.94
OUTFLOW: ID= 1 ( 0490)	3.820	0.169	3.58	85.72

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.56  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.2268

CALIB  
STANDHYD ( 6192) Area (ha)= 1.64  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.07	0.57
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	104.56	40.00
Mannings n =	0.013	0.250

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14				
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14				
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14				
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14				
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14				
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14				
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09				
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09				
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09				
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09				
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09				
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09				
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09				
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09				
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09				
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09				
1.417	6.14	2.917	159.59	4.417	8.18						
1.500	6.14	3.000	159.59	4.500	8.18						

Max.Eff.Inten.(mm/hr)= 159.59 120.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.18 (ii) 10.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.47 0.13 0.580 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 60.19 83.21  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.59 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0318)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3				

+ ID2= 2 ( 0603):	111.60	3.287	4.50	38.47
ID = 1 ( 0128):	167.26	5.222	4.33	46.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
 IN= 2--> OUT= 1  
 Routing time step (min)= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0319):	5.42	0.413	3.08	85.36
+ ID2= 2 ( 0447):	15.05	0.656	3.58	75.13
ID = 3 ( 0318):	20.47	0.960	3.17	77.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0318):	20.47	0.960	3.17	77.84
+ ID2= 2 ( 0490):	3.82	0.169	3.58	85.72
ID = 1 ( 0318):	24.29	1.124	3.50	79.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0318):	24.29	1.124	3.50	79.08
+ ID2= 2 ( 6192):	1.64	0.580	3.00	83.21
ID = 3 ( 0318):	25.93	1.501	3.00	79.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0127):	29.73	2.110	3.00	49.75
+ ID2= 2 ( 0318):	25.93	1.501	3.00	79.34
ID = 3 ( 0128):	55.66	3.611	3.00	63.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	55.66	3.611	3.00	63.53

2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0128)	167.26	5.22	4.33	46.81	2.37	0.08
OUTFLOW: ID= 1 ( 0604)	167.26	3.75	4.83	46.81	2.28	0.09

\*\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	Area (ha)	Curve Number (CN)
NASHDY ( 6041)	1.70	79.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 4.12	

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

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14				
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14				
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14				
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14				
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14				
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14				
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09				
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09				
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09				
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09				
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09				
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09				
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09				
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09				
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09				
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09				
1.417	6.14	2.917	159.59	4.417	8.18						
1.500	6.14	3.000	159.59	4.500	8.18						

Unit Hyd Qpeak (cms)= 0.616

PEAK FLOW (cms)= 0.032 (i)

TIME TO PEAK (hrs)= 7.500  
 RUNOFF VOLUME (mm)= 54.387  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.535

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

CALIB  
 | STANDBYD ( 6042) | Area (ha)= 22.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.49 7.81  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 385.57 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max. Eff. Inten. (mm/hr)= 159.59 165.04  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.76 (ii) 11.87 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.09

105.12	82.17	0.1100		
119.34	81.56	0.1100		
150.67	81.66	0.1100		
157.23	82.37	0.1100		
190.03	82.57	0.1100		
223.75	82.27	0.1100		
252.32	82.50	0.1100		
254.65	81.95	0.1100 / 0.0700	Main Channel	
258.15	80.95	0.0700	Main Channel	
259.65	81.95	0.0700 / 0.1100	Main Channel	
263.15	82.90	0.1100		
278.14	82.80	0.1100		
282.35	81.68	0.1100		
285.02	82.19	0.1100		
336.56	82.53	0.1100		
404.40	82.68	0.1100		

--- TRAVEL TIME TABLE ---

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

--- hydrograph --- <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0130) 191.26 8.24 3.00 50.76 1.14 0.35  
 OUTFLOW: ID= 1 ( 0605) 191.26 4.05 5.08 50.76 0.94 0.31

\*TOTALS\*  
 PEAK FLOW (cms)= 5.01 2.24 6.959 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 62.70 80.15  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.62 0.79

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

(i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 QPEAK TPEAK R.V.  
 | 1 + 2 = 3 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6041): 1.70 0.832 7.50 54.39  
 + ID2= 2 ( 6042): 22.30 6.959 3.00 80.15  
 ID = 3 ( 0129): 24.00 6.960 3.00 78.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130) | AREA QPEAK TPEAK R.V.  
 | 1 + 2 = 3 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0129): 24.00 6.960 3.00 78.32  
 + ID2= 2 ( 0604): 167.26 3.751 4.83 46.81  
 ID = 3 ( 0130): 191.26 8.238 3.00 50.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605) | Routing time step (min)= 5.00  
 | IN= 2--> OUT= 1 |

--- DATA FOR SECTION ( 801.4) ---

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100

CALIB  
 | NASHYD ( 6111) | Area (ha)= 0.60 Curve Number (CN)= 77.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.08

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)= 0.033 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 51.708  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.509

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

CALIB  
 | STANDBYD ( 6112) | Area (ha)= 10.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 62.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 6.70 4.10  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

Length (m) = 268.33 40.00  
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 148.49  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.83 (ii) 11.25 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.25 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 2.34 1.07 3.255 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 57.09 76.35  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.56 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.014 (i)  
TIME TO PEAK (hrs)= 4.417  
RUNOFF VOLUME (mm)= 39.039  
TOTAL RAINFALL (mm)= 101.620  
RUNOFF COEFFICIENT = 0.384

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

CALIB  
STANDHYD ( 6052) Area (ha)= 15.50  
ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 10.23 5.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 321.46 40.00  
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		

ADD HYD ( 0137)  
1 + 2 = 3  
AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 6111): 0.60 0.033 4.08 51.71  
+ ID2= 2 ( 6112): 10.80 3.255 3.00 76.35  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)  
1 + 2 = 3  
AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0137): 11.40 3.261 3.00 75.06  
+ ID2= 2 ( 0605): 191.26 4.051 5.08 50.76  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 6051) Area (ha)= 0.40 Curve Number (CN)= 66.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.31

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09

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

1.500	6.14	3.000	159.59	4.500	8.18		
-------	------	-------	--------	-------	------	--	--

Max.Eff.Inten.(mm/hr)= 159.59 128.04  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.27 (ii) 12.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.23 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 3.59 1.13 4.539 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 47.60 73.53  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.47 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131)  
1 + 2 = 3  
AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 6051): 0.40 0.014 4.42 39.04  
+ ID2= 2 ( 6052): 15.50 4.539 3.00 73.53  
=====

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 ( 0131): 15.90 4.541 3.00 72.66  
+ ID2= 2 ( 0139): 202.66 5.994 3.00 52.13  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2----> OUT= 1 Routing time step (min)= 5.00



INFLOW : ID= 2 ( 0132) 218.56 10.54 3.00 53.62 0.84 0.75  
 OUTFLOW: ID= 1 ( 0530) 218.56 8.27 3.08 53.62 0.76 0.73

CALIB  
 STANDHYD ( 5302) Area (ha)= 5.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.48 2.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 120.33  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 3.18 (ii) 11.25 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.09  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.22 0.48 1.622 (iii)

----- DATA FOR SECTION ( 350.0) -----

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 46.47 70.06  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.46 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.56	8.265	3.08	53.62
+ ID2= 2 ( 5302):	5.80	1.622	3.00	70.06
=====				
ID = 3 ( 0134):	224.36	9.202	3.00	54.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	274.04	14.840	3.08	58.15
+ ID2= 2 ( 0134):	224.36	9.202	3.00	54.05
=====				
ID = 3 ( 0135):	498.40	24.041	3.00	56.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)

IN= 2----> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 40.0) -----

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900

40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700
85.82	76.28	0.0700
89.97	76.89	0.0700
91.35	77.38	0.0700 / 0.0900
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0135) 498.40 24.04 3.00 56.30 2.31 0.96  
 OUTFLOW: ID= 1 ( 0507) 498.40 20.25 3.25 56.30 2.15 0.92

CALIB  
 NASHYD ( 5071) Area (ha)= 8.40 Curve Number (CN)= 74.0



6.00	0.00	37.33	0.12	68.67	0.42	100.00	0.21	131.33	0.17
6.08	0.00	37.42	0.12	68.75	0.44	100.08	0.20	131.42	0.17
6.17	0.00	37.50	0.12	68.83	0.46	100.17	0.21	131.50	0.17
6.25	0.00	37.58	0.12	68.92	0.49	100.25	0.19	131.58	0.17
6.33	0.00	37.67	0.13	69.00	0.51	100.33	0.19	131.67	0.17
6.42	0.00	37.75	0.12	69.08	0.54	100.42	0.19	131.75	0.17
6.50	0.00	37.83	0.12	69.17	0.56	100.50	0.19	131.83	0.17
6.58	0.00	37.92	0.12	69.25	0.60	100.58	0.19	131.92	0.17
6.67	0.00	38.00	0.12	69.33	0.64	100.67	0.19	132.00	0.16
6.75	0.00	38.08	0.12	69.42	0.67	100.75	0.21	132.08	0.17
6.83	0.00	38.17	0.12	69.50	0.67	100.83	0.19	132.17	0.17
6.92	0.00	38.25	0.12	69.58	0.68	100.92	0.19	132.25	0.17
7.00	0.00	38.33	0.12	69.67	0.65	101.00	0.19	132.33	0.17
7.08	0.00	38.42	0.12	69.75	0.66	101.08	0.19	132.42	0.18
7.17	0.00	38.50	0.12	69.83	0.66	101.17	0.20	132.50	0.17
7.25	0.00	38.58	0.12	69.92	0.67	101.25	0.19	132.58	0.16
7.33	0.00	38.67	0.13	70.00	0.66	101.33	0.18	132.67	0.17
7.42	0.00	38.75	0.13	70.08	0.67	101.42	0.19	132.75	0.17
7.50	0.00	38.83	0.13	70.17	0.67	101.50	0.19	132.83	0.17
7.58	0.00	38.92	0.13	70.25	0.70	101.58	0.19	132.92	0.16
7.67	0.00	39.00	0.13	70.33	0.74	101.67	0.20	133.00	0.17
7.75	0.00	39.08	0.14	70.42	0.73	101.75	0.19	133.08	0.16
7.83	0.00	39.17	0.14	70.50	0.74	101.83	0.18	133.17	0.16
7.92	0.00	39.25	0.14	70.58	0.74	101.92	0.19	133.25	0.16
8.00	0.00	39.33	0.14	70.67	0.74	102.00	0.19	133.33	0.15
8.08	0.00	39.42	0.14	70.75	0.75	102.08	0.19	133.42	0.16
8.17	0.00	39.50	0.15	70.83	0.75	102.17	0.19	133.50	0.16
8.25	0.00	39.58	0.16	70.92	0.74	102.25	0.18	133.58	0.17
8.33	0.00	39.67	0.16	71.00	0.74	102.33	0.18	133.67	0.16
8.42	0.00	39.75	0.16	71.08	0.75	102.42	0.19	133.75	0.15
8.50	0.00	39.83	0.16	71.17	0.77	102.50	0.19	133.83	0.16
8.58	0.00	39.92	0.17	71.25	0.76	102.58	0.19	133.92	0.16
8.67	0.00	40.00	0.17	71.33	0.76	102.67	0.18	134.00	0.16
8.75	0.00	40.08	0.17	71.42	0.77	102.75	0.20	134.08	0.16
8.83	0.00	40.17	0.17	71.50	0.76	102.83	0.18	134.17	0.15
8.92	0.00	40.25	0.18	71.58	0.77	102.92	0.18	134.25	0.16
9.00	0.00	40.33	0.18	71.67	0.76	103.00	0.17	134.33	0.16
9.08	0.00	40.42	0.18	71.75	0.76	103.08	0.17	134.42	0.16
9.17	0.00	40.50	0.18	71.83	0.78	103.17	0.18	134.50	0.16
9.25	0.00	40.58	0.19	71.92	0.77	103.25	0.18	134.58	0.15
9.33	0.00	40.67	0.19	72.00	0.76	103.33	0.17	134.67	0.16
9.42	0.00	40.75	0.19	72.08	0.74	103.42	0.17	134.75	0.15
9.50	0.00	40.83	0.19	72.17	0.75	103.50	0.17	134.83	0.15
9.58	0.00	40.92	0.19	72.25	0.74	103.58	0.18	134.92	0.16
9.67	0.00	41.00	0.19	72.33	0.72	103.67	0.18	135.00	0.15
9.75	0.00	41.08	0.19	72.42	0.70	103.75	0.18	135.08	0.15
9.83	0.00	41.17	0.20	72.50	0.70	103.83	0.18	135.17	0.15
9.92	0.00	41.25	0.20	72.58	0.69	103.92	0.19	135.25	0.15
10.00	0.00	41.33	0.21	72.67	0.70	104.00	0.17	135.33	0.15
10.08	0.00	41.42	0.22	72.75	0.68	104.08	0.18	135.42	0.15

10.17	0.00	41.50	0.23	72.83	0.67	104.17	0.18	135.50	0.15
10.25	0.00	41.58	0.23	72.92	0.66	104.25	0.17	135.58	0.15
10.33	0.00	41.67	0.23	73.00	0.64	104.33	0.17	135.67	0.14
10.42	0.00	41.75	0.24	73.08	0.63	104.42	0.17	135.75	0.15
10.50	0.00	41.83	0.25	73.17	0.63	104.50	0.18	135.83	0.16
10.58	0.00	41.92	0.25	73.25	0.61	104.58	0.17	135.92	0.15
10.67	0.00	42.00	0.26	73.33	0.62	104.67	0.16	136.00	0.15
10.75	0.00	42.08	0.25	73.42	0.61	104.75	0.16	136.08	0.15
10.83	0.00	42.17	0.26	73.50	0.62	104.83	0.18	136.17	0.15
10.92	0.00	42.25	0.26	73.58	0.60	104.92	0.16	136.25	0.15
11.00	0.00	42.33	0.26	73.67	0.62	105.00	0.17	136.33	0.15
11.08	0.00	42.42	0.26	73.75	0.58	105.08	0.16	136.42	0.15
11.17	0.00	42.50	0.26	73.83	0.59	105.17	0.16	136.50	0.15
11.25	0.00	42.58	0.26	73.92	0.57	105.25	0.16	136.58	0.15
11.33	0.00	42.67	0.26	74.00	0.57	105.33	0.16	136.67	0.14
11.42	0.00	42.75	0.25	74.08	0.57	105.42	0.16	136.75	0.15
11.50	0.00	42.83	0.26	74.17	0.56	105.50	0.16	136.83	0.14
11.58	0.00	42.92	0.25	74.25	0.58	105.58	0.16	136.92	0.14
11.67	0.00	43.00	0.25	74.33	0.58	105.67	0.16	137.00	0.14
11.75	0.00	43.08	0.25	74.42	0.58	105.75	0.17	137.08	0.15
11.83	0.00	43.17	0.25	74.50	0.59	105.83	0.16	137.17	0.14
11.92	0.00	43.25	0.25	74.58	0.60	105.92	0.16	137.25	0.15
12.00	0.00	43.33	0.25	74.67	0.57	106.00	0.16	137.33	0.15
12.08	0.00	43.42	0.25	74.75	0.56	106.08	0.16	137.42	0.14
12.17	0.00	43.50	0.25	74.83	0.54	106.17	0.16	137.50	0.14
12.25	0.00	43.58	0.25	74.92	0.56	106.25	0.17	137.58	0.14
12.33	0.00	43.67	0.25	75.00	0.53	106.33	0.16	137.67	0.15
12.42	0.00	43.75	0.25	75.08	0.51	106.42	0.16	137.75	0.14
12.50	0.00	43.83	0.26	75.17	0.51	106.50	0.16	137.83	0.14
12.58	0.00	43.92	0.26	75.25	0.51	106.58	0.16	137.92	0.14
12.67	0.00	44.00	0.26	75.33	0.51	106.67	0.16	138.00	0.14
12.75	0.00	44.08	0.26	75.42	0.50	106.75	0.16	138.08	0.14
12.83	0.00	44.17	0.26	75.50	0.50	106.83	0.15	138.17	0.14
12.92	0.00	44.25	0.27	75.58	0.49	106.92	0.15	138.25	0.14
13.00	0.00	44.33	0.26	75.67	0.49	107.00	0.16	138.33	0.14
13.08	0.00	44.42	0.26	75.75	0.49	107.08	0.16	138.42	0.14
13.17	0.00	44.50	0.26	75.83	0.48	107.17	0.16	138.50	0.14
13.25	0.00	44.58	0.26	75.92	0.47	107.25	0.15	138.58	0.14
13.33	0.00	44.67	0.26	76.00	0.47	107.33	0.16	138.67	0.14
13.42	0.00	44.75	0.26	76.08	0.48	107.42	0.16	138.75	0.14
13.50	0.00	44.83	0.26	76.17	0.46	107.50	0.15	138.83	0.14
13.58	0.00	44.92	0.26	76.25	0.45	107.58	0.16	138.92	0.14
13.67	0.00	45.00	0.26	76.33	0.45	107.67	0.15	139.00	0.14
13.75	0.00	45.08	0.26	76.42	0.43	107.75	0.15	139.08	0.14
13.83	0.00	45.17	0.25	76.50	0.44	107.83	0.16	139.17	0.13
13.92	0.00	45.25	0.25	76.58	0.46	107.92	0.16	139.25	0.14
14.00	0.00	45.33	0.25	76.67	0.43	108.00	0.16	139.33	0.14
14.08	0.00	45.42	0.25	76.75	0.44	108.08	0.15	139.42	0.14
14.17	0.00	45.50	0.25	76.83	0.43	108.17	0.15	139.50	0.14
14.25	0.00	45.58	0.25	76.92	0.45	108.25	0.15	139.58	0.13

14.33	0.00	45.67	0.25	77.00	0.42	108.33	0.16	139.67	0.14
14.42	0.00	45.75	0.25	77.08	0.43	108.42	0.16	139.75	0.14
14.50	0.00	45.83	0.26	77.17	0.43	108.50	0.15	139.83	0.13
14.58	0.00	45.92	0.25	77.25	0.42	108.58	0.15	139.92	0.14
14.67	0.00	46.00	0.26	77.33	0.41	108.67	0.15	140.00	0.14
14.75	0.00	46.08	0.26	77.42	0.43	108.75	0.16	140.08	0.13
14.83	0.00	46.17	0.25	77.50	0.41	108.83	0.15	140.17	0.13
14.92	0.69	46.25	0.26	77.58	0.43	108.92	0.15	140.25	0.13
15.00	0.69	46.33	0.26	77.67	0.39	109.00	0.15	140.33	0.13
15.08	0.71	46.42	0.26	77.75	0.39	109.08	0.15	140.42	0.14
15.17	0.74	46.50	0.26	77.83	0.37	109.17	0.15	140.50	0.13
15.25	0.74	46.58	0.26	77.92	0.39	109.25	0.15	140.58	0.13
15.33	0.74	46.67	0.26	78.00	0.39	109.33	0.14	140.67	0.13
15.42	0.77	46.75	0.26	78.08	0.39	109.42	0.15	140.75	0.13
15.50	0.76	46.83	0.25	78.17	0.37	109.50	0.15	140.83	0.13
15.58	0.78	46.92	0.25	78.25	0.36	109.58	0.14	140.92	0.13
15.67	0.78	47.00	0.25	78.33	0.37	109.67	0.15	141.00	0.13
15.75	0.77	47.08	0.25	78.42	0.38	109.75	0.14	141.08	0.13
15.83	0.77	47.17	0.26	78.50	0.36	109.83	0.15	141.17	0.13
15.92	0.77	47.25	0.26	78.58	0.36	109.92	0.14	141.25	0.13
16.00	0.76	47.33	0.26	78.67	0.36	110.00	0.14</		







STANDHYD ( 5012) | Area (ha)= 37.32  
 ID= 1 DT= 5.0 min | Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.18 23.14  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 498.00 40.00  
 Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 44.47  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 6.56 (ii) 18.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.40 1.55 3.431 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 21.60 31.20  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.32 0.46

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5011):	80.20	1.741	3.92	18.09
+ ID2= 2 ( 5012):	37.32	3.431	3.00	31.20
ID = 3 ( 0100):	117.52	3.793	3.00	22.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0502)  
 IN= 2--> OUT= 1

Routing time step (min)'= 5.00

----- DATA FOR SECTION (1537.5) -----

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34

0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

Unit Hyd Qpeak (cms)= 1.220  
 PEAK FLOW (cms)= 0.245 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 18.974  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.281

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

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

INFLOW: ID= 2 ( 0100)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
ID= 1 ( 0502)	117.52	3.79	3.00	22.25	1.05	0.74
	117.52	2.74	3.58	22.25	0.93	0.86

CALIB  
 NASHYD ( 5021) | Area (ha)= 3.67 Curve Number (CN)= 68.8  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.43

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

CALIB  
 NASHYD ( 5691) | Area (ha)= 2.30 Curve Number (CN)= 69.3  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.07

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70

Unit Hyd Qpeak (cms)= 0.328

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

PEAK FLOW (cms)= 0.147 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 20.352  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.301

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

CALIB  
 STANDHYD ( 0575) | Area (ha)= 0.78  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.51 0.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 72.11 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 44.30  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.06 (ii) 14.09 (ii)

1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.43  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.00 (ii) 13.61 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.13 0.02 0.147 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 21.69 47.22  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.32 0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.7 Ia = Dep. 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 ( 0568) | Area (ha)= 0.53  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 59.44 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.15 0.02 0.166 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.86 49.08  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38 0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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 ( 5082) | Area (ha)= 0.71  
 ID= 1 DT= 5.0 min | Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.52 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 68.80 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70

Max.Eff.Inten.(mm/hr)= 105.46 29.81  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 1.83 (ii) 15.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.07

PEAK FLOW (cms)= 0.10 0.01 0.107 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.82 46.26  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.26 0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0510) | Area (ha)= 0.76  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.59 0.17  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 71.18 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----



TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 52.93  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.04 (ii) 13.25 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.17 0.02 0.187 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 30.54 54.76  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.45 0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5092)	
ID= 1 DT= 5.0 min		Area (ha)= 1.73	Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.88	0.85	
Dep. Storage (mm)=	6.00	8.00	

CALIB		STANDHYD ( 0501)	
ID= 1 DT= 5.0 min		Area (ha)= 6.23	Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.62	3.61	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	203.80	40.00	
Mannings n =	0.013	0.250	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 20.98  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 3.83 (ii) 20.06 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.75 0.12 0.811 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 61.60 14.77 34.44  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.22 0.51

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

Average Slope (%)= 1.00 1.00  
Length (m)= 107.39 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 52.93  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.61 (ii) 13.82 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.25 0.08 0.322 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 30.54 46.25  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.45 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 5282)	
ID= 1 DT= 5.0 min		Area (ha)= 2.08	Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.35	0.73	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	117.76	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 53.51  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.76 (ii) 13.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.28 0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.39	0.07	0.451 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	61.60	30.86	50.84
TOTAL RAINFALL (mm)=	67.60	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.46	0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0501):	6.23	0.811	3.00	34.44
+ ID2= 2 ( 5021):	3.67	0.147	3.33	20.35
=====				
ID = 3 ( 0481):	9.90	0.887	3.00	29.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	9.90	0.887	3.00	29.21
+ ID2= 2 ( 5082):	0.71	0.147	3.00	47.22
=====				
ID = 1 ( 0481):	10.61	1.033	3.00	30.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	10.61	1.033	3.00	30.42
+ ID2= 2 ( 5092):	1.73	0.322	3.00	46.25
=====				
ID = 3 ( 0481):	12.34	1.356	3.00	32.64

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	18.01	2.345	3.00	34.33
+ ID2= 2 ( 0575):	0.78	0.166	3.00	49.08
=====				
ID = 1 ( 0481):	18.79	2.511	3.00	34.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 0524)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	7.22	Curve Number (CN)= 80.7
	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp	(hrs)=	0.20	

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87
0.167	2.70	1.667	6.76	3.167	14.87
0.250	2.70	1.750	6.76	3.250	14.87
0.333	2.70	1.833	6.76	3.333	14.87
0.417	2.70	1.917	6.76	3.417	14.87
0.500	2.70	2.000	6.76	3.500	14.87
0.583	4.06	2.083	8.11	3.583	6.76
0.667	4.06	2.167	8.11	3.667	5.17
0.750	4.06	2.250	8.11	3.750	5.25
0.833	4.06	2.333	8.11	3.833	5.33
0.917	4.06	2.417	8.11	3.917	5.42
1.000	4.06	2.500	8.11	4.000	5.50
1.083	4.06	2.583	40.56	4.083	5.41
1.167	4.06	2.667	40.56	4.167	5.41
1.250	4.06	2.750	73.01	4.250	5.41
1.333	4.06	2.833	73.01	4.333	5.41
1.417	4.06	2.917	105.46	4.417	5.41
1.500	4.06	3.000	105.46	4.500	5.41

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)=	0.738 (i)
TIME TO PEAK (hrs)=	3.083
RUNOFF VOLUME (mm)=	29.420
TOTAL RAINFALL (mm)=	67.600
RUNOFF COEFFICIENT =	0.435

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	12.34	1.356	3.00	32.64
+ ID2= 2 ( 0510):	0.76	0.187	3.00	54.76
=====				
ID = 1 ( 0481):	13.10	1.542	3.00	33.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	13.10	1.542	3.00	33.92
+ ID2= 2 ( 5282):	2.08	0.451	3.00	50.84
=====				
ID = 3 ( 0481):	15.18	1.993	3.00	36.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	15.18	1.993	3.00	36.24
+ ID2= 2 ( 0568):	0.53	0.107	3.00	46.26
=====				
ID = 1 ( 0481):	15.71	2.100	3.00	36.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	15.71	2.100	3.00	36.58
+ ID2= 2 ( 5691):	2.30	0.245	3.00	18.97
=====				
ID = 3 ( 0481):	18.01	2.345	3.00	34.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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

CALIB				
NASHYD ( 0522)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	3.31	Curve Number (CN)= 63.1
	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp	(hrs)=	0.16	

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

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87
0.167	2.70	1.667	6.76	3.167	14.87
0.250	2.70	1.750	6.76	3.250	14.87
0.333	2.70	1.833	6.76	3.333	14.87
0.417	2.70	1.917	6.76	3.417	14.87
0.500	2.70	2.000	6.76	3.500	14.87
0.583	4.06	2.083	8.11	3.583	6.76
0.667	4.06	2.167	8.11	3.667	6.76
0.750	4.06	2.250	8.11	3.750	6.76
0.833	4.06	2.333	8.11	3.833	6.76
0.917	4.06	2.417	8.11	3.917	6.76
1.000	4.06	2.500	8.11	4.000	6.76
1.083	4.06	2.583	40.56	4.083	5.41
1.167	4.06	2.667	40.56	4.167	5.41
1.250	4.06	2.750	73.01	4.250	5.41
1.333	4.06	2.833	73.01	4.333	5.41
1.417	4.06	2.917	105.46	4.417	5.41
1.500	4.06	3.000	105.46	4.500	5.41

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)=	0.207 (i)
TIME TO PEAK (hrs)=	3.000
RUNOFF VOLUME (mm)=	16.970
TOTAL RAINFALL (mm)=	67.600
RUNOFF COEFFICIENT =	0.251

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

CALIB				
STANDHYD ( 0580)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	1.87	Total Imp(%)= 65.00
				Dir. Conn.(%)= 65.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.22 0.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 111.65 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 29.81  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.67 (ii) 16.77 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.29 0.06  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.35 0.03 0.373 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.82 46.27  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.26 0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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  
 | STANDBYD ( 0529) | Area (ha)= 1.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44

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

-----  
 CALIB  
 | STANDBYD ( 0519) | Area (ha)= 2.08  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.76 (ii) 17.13 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.39 0.03 0.413 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 46.00

over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.64 (ii) 17.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.29 0.06  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.41 0.02 0.420 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 51.79  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.77

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0298)  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0519): 2.08 0.413 3.00 46.00  
 + ID2= 2 ( 0529): 1.80 0.420 3.00 51.79  
 =====  
 ID = 3 ( 0298): 3.88 0.833 3.00 48.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 ADD HYD ( 0298)  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0298): 3.88 0.833 3.00 48.69  
 + ID2= 2 ( 0580): 1.87 0.373 3.00 46.27  
 =====  
 ID = 1 ( 0298): 5.75 1.206 3.00 47.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 ADD HYD ( 0296)  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0298): 5.75 1.206 3.00 47.90

+ ID2= 2 ( 0522): 3.31 0.207 3.00 16.97  
 =====  
 ID = 3 ( 0296): 9.06 1.413 3.00 36.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0523) | Area (ha)= 6.61  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 115.46  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.90 (ii) 12.11 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.94 0.32 1.209 (iii)

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 43.62  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.48 (ii) 14.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.08  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.27 0.04 0.306 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 61.60 25.49 48.95  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38 0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0304)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0291): 15.67 2.622 3.00 40.33  
 + ID2= 2 ( 0525): 1.45 0.306 3.00 48.95  
 =====  
 ID = 3 ( 0304): 17.12 2.928 3.00 41.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0295)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 29.30 45.45  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.43 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0291)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0296): 9.06 1.413 3.00 36.60  
 + ID2= 2 ( 0523): 6.61 1.209 3.00 45.45  
 =====  
 ID = 3 ( 0291): 15.67 2.622 3.00 40.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0525) | Area (ha)= 1.45  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.94 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 98.32 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

(ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0304): 17.12 2.928 3.00 41.06  
 + ID2= 2 ( 0524): 7.22 0.738 3.08 29.42  
 =====  
 ID = 3 ( 0295): 24.34 3.602 3.00 37.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0527) | Area (ha)= 1.68  
 ID= 1 DT= 5.0 min | Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.28 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 105.83 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 162.12  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.59 (ii) 9.75 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.11

\*TOTALS\*  
 PEAK FLOW (cms)= 0.25 0.13 0.383 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 61.60 41.71 52.05  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.62 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.2 Ia = Dep. 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 ( 0301)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0295):	24.34	3.602	3.00	37.61
+ ID2= 2 ( 0527):	1.68	0.383	3.00	52.05
ID = 3 ( 0301):	26.02	3.985	3.00	38.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0520) Area (ha)= 2.27  
 ID= 1 DT= 5.0 min Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.38	0.89
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	123.02	40.00
Mannings n	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06

IN= 2---> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1400	0.8343
0.0195	0.2416	0.2360	1.0014
0.0700	0.5564	0.3420	1.6616

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
INFLOW : ID= 2 ( 0305)	28.290	4.446	3.00	39.32
OUTFLOW: ID= 1 ( 0445)	28.290	0.192	5.25	39.12

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.32  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.9251

CALIB  
 STANDHYD ( 0526) Area (ha)= 0.94  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.73	0.21
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	79.16	40.00
Mannings n	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	14.87	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70

	0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70	2.70

Max.Eff.Inten.(mm/hr)= 105.46 46.97  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 2.83 (ii) 14.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.40 0.07 0.461 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.31 48.22  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.40 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.3 Ia = Dep. 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 ( 0305)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0301):	26.02	3.985	3.00	38.54
+ ID2= 2 ( 0520):	2.27	0.461	3.00	48.22
ID = 3 ( 0305):	28.29	4.446	3.00	39.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0445) OVERFLOW IS OFF

	1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70	2.70

Max.Eff.Inten.(mm/hr)= 105.46 47.15  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 2.17 (ii) 13.91 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.21 0.02 0.228 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.41 54.07  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.41 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0310) OVERFLOW IS OFF

IN= 2---> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
INFLOW : ID= 2 ( 0526)	0.940	0.228	3.00	54.07
OUTFLOW: ID= 1 ( 0310)	0.940	0.027	3.58	53.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.80  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0345

CALIB  
 STANDHYD ( 0574) Area (ha)= 1.44  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.12 0.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 97.98 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 37.49  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.47 (ii) 15.34 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.29 0.07

PEAK FLOW (cms)= 0.33 0.02 0.340 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 22.11 52.91  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.33 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

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

RESERVOIR( 0307) OVERFLOW IS OFF

IN= 2---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
		0.0000	0.0000	0.0730	0.0642
		0.0150	0.0327	0.0890	0.0712
		0.0310	0.0455	0.1030	0.0784
		0.0450	0.0536	0.0000	0.0000

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 INFLOW : ID= 2 ( 0574) 1.440 0.340 3.00 52.91  
 OUTFLOW: ID= 1 ( 0307) 1.440 0.041 3.58 52.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.02  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0513

ADD HYD ( 0306)

ID	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0307):	1.44	0.041	3.58	52.53
+ ID2= 2 ( 0310):	0.94	0.027	3.58	53.45
=====				
ID = 3 ( 0306):	2.38	0.068	3.58	52.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

STANDHYD ( 0571)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min	19.59	68.00	50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 13.32 6.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 361.39 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 77.97  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.41 (ii) 15.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.07

PEAK FLOW (cms)= 2.71 0.69 3.187 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.10 43.35  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.37 0.64

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.6 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Average Slope (%)= 1.00 1.00  
 Length (m)= 274.59 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 123.41  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.58 (ii) 12.57 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 1.59 0.67 2.164 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 36.25 48.92  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.54 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0572)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min	11.31	71.00	50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.03 3.28  
 Dep. Storage (mm)= 6.00 8.00

ADD HYD ( 0314)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0571):	19.59	3.187	3.00	43.35
+ ID2= 2 ( 0572):	11.31	2.164	3.00	48.92
=====				
ID = 3 ( 0314):	30.90	5.352	3.00	45.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0573)	2.66	60.00	60.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.60	1.06
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	133.17	40.00
Mannings n	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 41.76

over (min)	5.00	20.00	
Storage Coeff. (min)=	2.97 (ii)	15.29 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.28	0.07	
*TOTALS*			
PEAK FLOW (cms)=	0.46	0.07	0.512 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	61.60	24.46	46.74
TOTAL RAINFALL (mm)=	67.60	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.36	0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 74.8 Ia = Dep. 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 ( 0317)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0314):	30.90	5.352	3.00	45.39
+ ID2= 2 ( 0573):	2.66	0.512	3.00	46.74
=====				
ID = 3 ( 0317):	33.56	5.863	3.00	45.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0446)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2--> OUT= 1				
DT= 5.0 min	0.0000	0.0000	0.2300	1.1312
	0.0230	0.3704	0.2810	1.3850
	0.0900	0.8066	0.4120	2.2335

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW: ID= 2 ( 0317)	33.560	5.863	3.00	45.50
OUTFLOW: ID= 1 ( 0446)	33.560	0.257	5.17	44.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.38  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.2644

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0306):	2.38	0.068	3.58	52.89
+ ID2= 2 ( 0445):	28.29	0.192	5.25	39.12
=====				
ID = 3 ( 0102):	30.67	0.240	5.00	40.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0102):	30.67	0.240	5.00	40.19
+ ID2= 2 ( 0446):	33.56	0.257	5.17	44.87
=====				
ID = 1 ( 0102):	64.23	0.496	5.08	42.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0102):	64.23	0.496	5.08	42.64
+ ID2= 2 ( 0481):	18.79	2.511	3.00	34.94
=====				
ID = 3 ( 0102):	83.02	2.676	3.00	40.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0102):	83.02	2.676	3.00	40.89
+ ID2= 2 ( 0502):	117.52	2.740	3.58	22.25
=====				
ID = 1 ( 0102):	200.54	4.231	3.00	29.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2--> OUT= 1 Routing time step (min)= 5.00

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	1.30E+04	3.1	0.89	6.93
1.21	85.42	1.77E+04	5.0	1.06	5.87
1.41	85.62	2.34E+04	7.4	1.17	5.28
1.62	85.83	3.00E+04	10.2	1.27	4.89
1.83	86.04	3.76E+04	13.6	1.35	4.60
2.03	86.24	4.62E+04	17.6	1.42	4.37
2.24	86.45	5.60E+04	22.1	1.47	4.22
2.45	86.66	6.95E+04	27.6	1.48	4.20
2.66	86.87	9.25E+04	31.2	1.25	4.94
2.86	87.07	1.68E+05	43.1	0.96	6.48
3.07	87.28	2.97E+05	67.7	0.85	7.30
3.28	87.49	4.56E+05	103.1	0.84	7.38
3.48	87.69	6.63E+05	159.6	0.89	6.93
3.69	87.90	9.07E+05	223.4	0.92	6.77

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

AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 200.54 4.23 3.00 29.97 1.12 0.98  
 OUTFLOW: ID= 1 ( 0503) 200.54 3.75 3.50 29.97 1.07 0.94

CALIB  
 NASHYD ( 5031) Area (ha)= 1.70 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.82

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.079

PEAK FLOW (cms) = 0.046 (i)  
 TIME TO PEAK (hrs) = 3.833  
 RUNOFF VOLUME (mm) = 21.745  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.322

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

CALIB  
 STANDHYD ( 5032) Area (ha)= 12.20  
 ID= 1 DT= 5.0 min Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00

IMPERVIOUS (i)  
 Surface Area (ha)= 7.20 5.00  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 285.19 40.00  
 Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 58.34  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.69 (ii) 15.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.07

PEAK FLOW (cms)= 1.61 0.48 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 26.62 43.06  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.39 0.64

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

ADD HYD ( 0103)  
 1 + 2 = 3  
 ID1= 1 ( 5031): 1.70 0.046 3.83 21.75  
 + ID2= 2 ( 0502): 12.20 1.944 3.00 43.06  
 ID = 3 ( 0103): 13.90 1.954 3.00 40.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3  
 ID1= 1 ( 0103): 13.90 1.954 3.00 40.45  
 + ID2= 2 ( 0502): 200.54 3.752 3.50 29.97  
 ID = 3 ( 0104): 214.44 5.325 3.00 30.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2----> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<----- hydrograph -----> <-pipe / channel->  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
 INFLOW : ID= 2 ( 0104) 214.44 5.32 3.00 30.65 0.74 0.32  
 OUTFLOW: ID= 1 ( 0504) 214.44 4.21 3.58 30.65 0.70 0.32

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.89

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.007 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 19.823  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.293

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

CALIB  
 STANDHYD ( 5042)  
 ID= 1 DT= 5.0 min

Area (ha) = 7.40  
 Total Imp(%) = 66.00 Dir. Conn.(%) = 54.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	4.88	2.52
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	222.11	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0105):	7.70	1.348	3.00	43.95
+ ID2= 2 ( 0504):	214.44	4.212	3.58	30.65
ID = 3 ( 0106):	222.14	4.503	3.50	31.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5211)  
 ID= 1 DT= 5.0 min

Area (ha) = 1.90 Curve Number (CN) = 77.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.95

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.076

PEAK FLOW (cms) = 0.056 (i)  
 TIME TO PEAK (hrs) = 4.000

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 57.91  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.04 (ii) 14.85 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms) = 1.14 0.26 1.347 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.17 3.00  
 RUNOFF VOLUME (mm) = 61.60 25.36 44.93  
 TOTAL RAINFALL (mm) = 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5041):	0.30	0.007	3.92	19.82
+ ID2= 2 ( 5042):	7.40	1.347	3.00	44.93
ID = 3 ( 0105):	7.70	1.348	3.00	43.95

RUNOFF VOLUME (mm) = 26.220  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.388

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

CALIB  
 STANDHYD ( 5212)  
 ID= 1 DT= 5.0 min

Area (ha) = 13.80  
 Total Imp(%) = 52.00 Dir. Conn.(%) = 40.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	7.18	6.62
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	303.32	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 77.38  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.87 (ii) 14.49 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*

PEAK FLOW (cms)= 1.54 0.78 2.189 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 30.73 43.08  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.45 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.056	4.00	26.22
+ ID2= 2 ( 5212):	13.80	2.189	3.00	43.08
ID = 3 ( 0112):	15.70	2.199	3.00	41.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0106):	222.14	4.503	3.50	31.11
+ ID2= 2 ( 0112):	15.70	2.199	3.00	41.04
ID = 3 ( 0114):	237.84	6.489	3.00	31.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0505)  
 IN= 2--> OUT= 1 Routing time step (min)= 5.00

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100

NASHYD ( 5051) Area (ha)= 1.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.039 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 19.829  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.293

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

CALIB  
 STANDHYD ( 5052) Area (ha)= 14.60  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 9.64 4.96  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 311.98 40.00

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0114)	237.84	6.49	3.00	31.76	0.58
OUTFLOW: ID= 1 ( 0505)	237.84	5.90	3.08	31.76	0.54

CALIB

Mannings n = 0.013 0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 57.91  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 4.95 (ii) 15.76 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.07

PEAK FLOW (cms)= 2.20 0.47 2.526 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.36 44.93  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0501):	1.30	0.039	3.58	19.83
+ ID2= 2 ( 0502):	14.60	2.526	3.00	44.93
-----				
ID = 3 ( 0107):	15.90	2.538	3.00	42.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0107):	15.90	2.538	3.00	42.88
+ ID2= 2 ( 0505):	237.84	5.896	3.08	31.76
-----				
ID = 3 ( 0108):	253.74	7.761	3.00	32.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0108)	253.74	7.76	3.00	32.46	1.44	1.20
OUTFLOW: ID= 1 ( 0506)	253.74	7.36	3.08	32.46	1.42	1.20

CALIB  
NASHYD ( 5061) | Area (ha)= 3.90 | Curve Number (CN)= 71.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 | # of Linear Res. (N)= 3.00  
U.H. Tp(hrs)= 0.62

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70

0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.129 (i)  
TIME TO PEAK (hrs)= 3.583  
RUNOFF VOLUME (mm)= 21.745  
TOTAL RAINFALL (mm)= 67.600  
RUNOFF COEFFICIENT = 0.322

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

CALIB  
STANDHYD ( 5062) | Area (ha)= 7.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 | Dir. Conn.(%)= 53.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	5.07	2.73
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	228.04	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 | 73.65  
over (min)= 5.00 | 15.00  
Storage Coeff. (min)= 4.10 (ii) | 13.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 | 15.00  
Unit Hyd. peak (cms)= 0.24 | 0.08

PEAK FLOW (cms)= 1.18 | 0.31  
TIME TO PEAK (hrs)= 3.00 | 3.08  
RUNOFF VOLUME (mm)= 61.60 | 27.36  
TOTAL RAINFALL (mm)= 67.60 | 67.60  
RUNOFF COEFFICIENT = 0.91 | 0.40

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 | Ia = Dep. 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 ( 0109)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0061):	3.90	0.129	3.58	21.75
+ ID2= 2 ( 0062):	7.80	1.430	3.00	45.50
-----				
ID = 3 ( 0109):	11.70	1.472	3.00	37.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0109):	11.70	1.472	3.00	37.58
+ ID2= 2 ( 0506):	253.74	7.357	3.08	32.46

ID = 3 ( 0110): 265.44 8.197 3.08 32.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.42

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.012 (i)
TIME TO PEAK (hrs)= 4.583
RUNOFF VOLUME (mm)= 18.648
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.276

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

CALIB
STANDHYD ( 5102) Area (ha)= 0.90

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

Table with 5 columns: ADD HYD ( 0115), AREA, QPEAK, TPEAK, R.V. Rows show hydrograph data for different sections.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)
IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Table with 4 columns: Distance, Elevation, Manning, Main Channel. Rows show data for different distances along the channel.

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

Table with 6 columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Rows show travel time data for various depths.

ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.45 0.45
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 77.46 40.00
Mannings n = 0.013 0.250

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Max.Eff.Inten.(mm/hr)= 105.46 50.94
over (min) = 5.00 15.00
Storage Coeff. (min)= 2.15 (ii) 13.53 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.09 0.04 \*TOTALS\*
TIME TO PEAK (hrs)= 3.00 3.08 0.126 (iii)
RUNOFF VOLUME (mm)= 61.60 23.29 36.69
TOTAL RAINFALL (mm)= 67.60 67.60 67.60
RUNOFF COEFFICIENT = 0.91 0.34 0.54

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 66.0 Ia = Dep. Storage (Above)

Table with 6 columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL. Rows show hydrograph data for different sections.

CALIB
NASHYD ( 5111) Area (ha)= 1.90 Curve Number (CN)= 67.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.56

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Unit Hyd Qpeak (cms)= 0.129
PEAK FLOW (cms)= 0.059 (i)

TIME TO PEAK (hrs)= 3.500  
 RUNOFF VOLUME (mm)= 19.230  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.284

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

CALIB  
 | STANHYD ( 5112) | Area (ha)= 1.10  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.55 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 85.63 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 58.91  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.28 (ii) 13.02 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.08

41.13 82.12 0.0900 / 0.0700 Main Channel  
 46.88 79.71 0.0700 Main Channel  
 51.41 80.90 0.0700 / 0.0900 Main Channel  
 94.29 80.56 0.0900  
 175.64 80.72 0.0900  
 192.09 80.85 0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

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

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0117)	4.70	0.27	3.00	27.08	0.50	0.34
OUTFLOW: ID= 1 ( 0512)	4.70	0.16	3.33	27.08	0.41	0.30

CALIB  
 | NASHYD ( 5121) | Area (ha)= 0.70 Curve Number (CN)= 71.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.14

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.11 0.06 0.162 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 26.73 38.93  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.40 0.58

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0116)  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5111): 1.90 0.059 3.50 19.23  
 + ID2= 2 ( 5112): 1.10 0.162 3.00 38.93  
 ID = 3 ( 0116): 3.00 0.184 3.00 26.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0116): 3.00 0.184 3.00 26.45  
 + ID2= 2 ( 0511): 1.70 0.092 3.08 28.20  
 ID = 3 ( 0117): 4.70 0.274 3.00 27.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 | IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.015 (i)  
 TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 21.742  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.322

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

CALIB  
 | STANHYD ( 5122) | Area (ha)= 3.20  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.92 1.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 146.06 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06

0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 72.02  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.14 (ii) 13.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.43 0.15 0.555 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 27.10 43.31  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.40 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5121):	0.70	0.015	4.25	21.74
+ ID2= 2 ( 5122):	3.20	0.555	3.00	43.31
=====				
ID = 3 ( 0118):	3.90	0.557	3.00	39.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0118):	3.90	0.557	3.00	39.44
+ ID2= 2 ( 0512):	4.70	0.160	3.33	27.08
=====				
ID = 3 ( 0119):	8.60	0.674	3.00	32.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0110):	265.44	8.197	3.08	32.68
+ ID2= 2 ( 0119):	8.60	0.674	3.00	32.68
=====				
ID = 3 ( 0120):	274.04	8.642	3.00	32.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6011)			
ID= 1 DT= 5.0 min			
Area (ha)=	44.10	Curve Number (CN)=	62.0
Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.83		

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70

1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.881 (i)  
TIME TO PEAK (hrs)= 3.833  
RUNOFF VOLUME (mm)= 16.500  
TOTAL RAINFALL (mm)= 67.600  
RUNOFF COEFFICIENT = 0.244

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

CALIB	
STANDHYD ( 6012)	
ID= 1 DT= 5.0 min	
Area (ha)=	11.00
Total Imp(%)=	28.00
Dir. Conn.(%)=	16.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	7.92
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	270.80	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70

1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 37.03  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.55 (ii) 17.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.06

PEAK FLOW (cms)= 0.50 0.45 0.795 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 19.00 25.82  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.28 0.38

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6011):	44.10	0.881	3.83	16.50
+ ID2= 2 ( 6012):	11.00	0.795	3.00	25.82
=====				
ID = 3 ( 0124):	55.10	1.120	3.50	18.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6021)			
ID= 1 DT= 5.0 min			
Area (ha)=	43.60	Curve Number (CN)=	62.0
Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
U.H. Tp(hrs)=	0.95		

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

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 1.753

PEAK FLOW (cms) = 0.789 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 16.500  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.244

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

CALIB  
 STANDHYD ( 6022)  
 ID= 1 DT= 5.0 min

Area (ha) = 12.90  
 Total Imp(%) = 35.00 Dir. Conn.(%) = 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 4.51 8.38  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 293.26 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06

ADD HYD ( 0126)  
 1 + 2 = 3

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

ID1= 1 ( 0124): 55.10 1.120 3.50 18.36  
 + ID2= 2 ( 0125): 56.50 1.292 3.00 19.35  
 ID = 3 ( 0126): 111.60 2.273 3.00 18.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<--- DATA FOR SECTION (2135.9) --->

Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

<--- TRAVEL TIME TABLE --->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64

0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 38.11  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.77 (ii) 17.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.83 0.49 1.157 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 19.26 28.99  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.28 0.43

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3

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

ID1= 1 ( 6021): 43.60 0.789 4.00 16.50  
 + ID2= 2 ( 6022): 12.90 1.157 3.00 28.99  
 ID = 3 ( 0125): 56.50 1.292 3.00 19.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	1.10E+06	74.7	0.62	24.65
1.83	91.42	1.33E+06	93.4	0.64	23.71
2.00	91.59	1.59E+06	113.6	0.66	23.26
2.17	91.76	1.88E+06	136.6	0.67	22.96
2.33	91.92	2.22E+06	168.5	0.70	21.97
2.50	92.09	2.58E+06	211.3	0.75	20.33
2.67	92.26	2.94E+06	258.5	0.81	18.98
2.83	92.42	3.32E+06	310.1	0.86	17.85
3.00	92.59	3.71E+06	358.0	0.88	17.29

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 0126) 111.60 2.27 3.00 18.86 0.60 0.22  
 OUTFLOW: ID= 1 ( 0603) 111.60 1.51 4.58 18.86 0.55 0.21

CALIB  
 NASHYD ( 6031)  
 ID= 1 DT= 5.0 min

Area (ha) = 19.00 Curve Number (CN) = 72.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.32

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70

1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Unit Hyd Qpeak (cms) = 0.550

PEAK FLOW (cms) = 0.369 (i)  
TIME TO PEAK (hrs) = 4.500  
RUNOFF VOLUME (mm) = 22.428  
TOTAL RAINFALL (mm) = 67.600  
RUNOFF COEFFICIENT = 0.332

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

CALIB  
STANDHYD ( 6032) | Area (ha) = 10.73  
ID= 1 DT= 5.0 min | Total Imp(%) = 28.00 Dir. Conn.(%) = 15.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha) = 3.00 7.73  
Dep. Storage (mm) = 6.00 8.00  
Average Slope (%) = 1.00 1.00  
Length (m) = 267.46 40.00  
Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr  
0.083 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06  
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06  
0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06  
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06  
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06  
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06  
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70  
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70  
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70  
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 51.33  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 4.51 (ii) 15.86 (iii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.07

\*TOTALS\*  
PEAK FLOW (cms) = 0.45 0.65 0.895 (iii)  
TIME TO PEAK (hrs) = 3.00 3.17 3.00  
RUNOFF VOLUME (mm) = 61.60 25.60 31.00  
TOTAL RAINFALL (mm) = 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.38 0.46

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0127)  
1 + 2 = 3  
AREA OPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 6031): 19.00 0.369 4.50 22.43  
+ ID2= 2 ( 6032): 10.73 0.895 3.00 31.00  
===== ID = 3 ( 0127): 29.73 0.934 3.00 25.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 6131) | Area (ha) = 1.77 Curve Number (CN) = 66.0  
ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
U.H. Tp(hrs) = 0.22

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 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06  
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06

0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06  
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06  
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06  
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06  
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70  
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70  
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70  
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Unit Hyd Qpeak (cms) = 0.302

PEAK FLOW (cms) = 0.101 (i)  
TIME TO PEAK (hrs) = 3.083  
RUNOFF VOLUME (mm) = 18.628  
TOTAL RAINFALL (mm) = 67.600  
RUNOFF COEFFICIENT = 0.276

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

CALIB  
STANDHYD ( 6222) | Area (ha) = 2.02  
ID= 1 DT= 5.0 min | Total Imp(%) = 78.00 Dir. Conn.(%) = 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha) = 1.58 0.44  
Dep. Storage (mm) = 6.00 8.00  
Average Slope (%) = 1.00 1.00  
Length (m) = 116.05 40.00  
Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr  
0.083 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06  
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06  
0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06  
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06

0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06  
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06  
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70  
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70  
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70  
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 35.47  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.73 (ii) 15.89 (iii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*  
PEAK FLOW (cms) = 0.46 0.03 0.475 (iii)  
TIME TO PEAK (hrs) = 3.00 3.17 3.00  
RUNOFF VOLUME (mm) = 61.60 20.99 52.66  
TOTAL RAINFALL (mm) = 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.31 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 6142) | Area (ha) = 1.50  
ID= 1 DT= 5.0 min | Total Imp(%) = 69.00 Dir. Conn.(%) = 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha) = 1.04 0.47  
Dep. Storage (mm) = 6.00 8.00  
Average Slope (%) = 1.00 1.00  
Length (m) = 100.00 40.00  
Mannings n = 0.013 0.250

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



---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 81.09  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.50 (ii) 11.95 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.22 0.06 0.270 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 25.32 43.46  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.37 0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6152) | Area (ha)= 2.14  
| ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)

-----  
| CALIB |  
| STANDHYD ( 6182) | Area (ha)= 1.49  
| ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.16 0.33  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 99.67 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 141.15  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.50 (ii) 10.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.10

\*TOTALS\*

PEAK FLOW (cms)= 0.22 0.08 0.288 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 31.69 46.64  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.47 0.69

Surface Area (ha)= 1.67 0.47  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 119.44 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 35.47  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.78 (ii) 15.93 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.48 0.03 0.502 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 20.99 52.66  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.31 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
| ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.81 0.05  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 75.72 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
over (min) 5.00 5.00  
Storage Coeff. (min)= 2.12 (ii) 4.95 (ii)

Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.22

\*TOTALS\*  
 PEAK FLOW (cms)= 0.24 0.00 0.241 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 58.92  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.87

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6172) | Area (ha)= 2.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70

1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 161.84  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.85 (ii) 10.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.10

\*TOTALS\*  
 PEAK FLOW (cms)= 0.34 0.15 0.464 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 61.60 36.48 49.04  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.54 0.73

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0342)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6142):	1.50	0.270	3.00	43.46
+ ID2= 2 ( 6152):	2.14	0.502	3.00	52.66
=====				
ID = 3 ( 0342):	3.64	0.772	3.00	48.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0342):	3.64	0.772	3.00	48.87
+ ID2= 2 ( 6172):	2.31	0.464	3.00	49.04
=====				
ID = 1 ( 0342):	5.95	1.237	3.00	48.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0342):	5.95	1.237	3.00	48.93
+ ID2= 2 ( 6182):	1.49	0.288	3.00	46.64
=====				
ID = 3 ( 0342):	7.44	1.524	3.00	48.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0342):	7.44	1.524	3.00	48.47
+ ID2= 2 ( 6222):	2.02	0.475	3.00	52.66
=====				
ID = 1 ( 0342):	9.46	1.999	3.00	49.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0342):	9.46	1.999	3.00	49.37
+ ID2= 2 ( 6302):	0.86	0.241	3.00	58.92
=====				
ID = 3 ( 0342):	10.32	2.240	3.00	50.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6212) | Area (ha)= 1.15  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.75 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 87.56 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.31 (ii) 16.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.22 0.02 0.230 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 45.99  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.68

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6232) | Area (ha)= 0.85  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.55 0.30  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.28 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.11 (ii) 16.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.16 0.01 0.170 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 45.99  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Max.Eff.Inten.(mm/hr)= 105.46 48.04  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.19 (ii) 13.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.17 0.03 0.195 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.90 48.11  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.41 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0346)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	10.32	2.240	3.00	50.16
+ ID2= 2 ( 0488):	2.00	0.400	3.00	45.99
=====				
ID = 3 ( 0346):	12.32	2.640	3.00	49.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0346):	12.32	2.640	3.00	49.49
+ ID2= 2 ( 6131):	1.77	0.101	3.08	18.63
=====				
ID = 1 ( 0346):	14.09	2.725	3.00	45.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	10.32	2.240	3.00	50.16
+ ID2= 2 ( 6131):	1.77	0.101	3.08	18.63
=====				
ID = 3 ( 0346):	12.32	2.640	3.00	49.49

ADD HYD ( 0488)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6212):	1.15	0.230	3.00	45.99
+ ID2= 2 ( 6232):	0.85	0.170	3.00	45.99
=====				
ID = 3 ( 0488):	2.00	0.400	3.00	45.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 6262)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	0.96	
	Total Imp(%)=	60.00	Dir. Conn.(%)=	60.00
=====				
IMPERVIOUS PERVIOUS (i)				
Surface Area	(ha)=	0.58	0.38	
Dep. Storage	(mm)=	6.00	8.00	
Average Slope	(%)=	1.00	1.00	
Length	(m)=	80.00	40.00	
Mannings n	=	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0346):	14.09	2.725	3.00	45.61
+ ID2= 2 ( 6262):	0.96	0.195	3.00	48.11
=====				
ID = 3 ( 0346):	15.05	2.921	3.00	45.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0447)				
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.1070	0.3146
	0.0150	0.1715	0.7100	0.8031

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0346)	15.050	2.921	3.00	45.77
OUTFLOW: ID= 1 ( 0447)	15.050	0.310	3.75	45.58

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.61  
 TIME SHIFT OF PEAK FLOW (min)= 45.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.4792

CALIB				
STANDHYD ( 6202)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	1.26	
	Total Imp(%)=	94.00	Dir. Conn.(%)=	94.00
=====				
IMPERVIOUS PERVIOUS (i)				
Surface Area	(ha)=	1.18	0.08	
Dep. Storage	(mm)=	6.00	8.00	
Average Slope	(%)=	1.00	1.00	
Length	(m)=	91.65	40.00	
Mannings n	=	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.37 (ii) 5.20 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.16

PEAK FLOW (cms)= 0.35 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.351 (iii)  
RUNOFF VOLUME (mm)= 61.60 17.04 58.92  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0491)  
IN= 2--> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0580	0.0848
0.0090	0.0366	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.260	0.351	3.00	58.92
1.260	0.027	3.58	58.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.82  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0548

CALIB  
STANDHYD ( 6062)  
ID= 1 DT= 5.0 min

Area (ha)= 1.98  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area (ha)	IMPERVIOUS (ha)	PERVIOUS (i)
1.29	1.29	0.69
6.00	6.00	8.00
1.00	1.00	1.00
114.89	114.89	40.00
0.013	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN
hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr
0.083 2.70	1.583 6.76	3.083 14.87	4.58 4.06		
0.167 2.70	1.667 6.76	3.167 14.87	4.67 4.06		
0.250 2.70	1.750 6.76	3.250 14.87	4.75 4.06		
0.333 2.70	1.833 6.76	3.333 14.87	4.83 4.06		
0.417 2.70	1.917 6.76	3.417 14.87	4.92 4.06		
0.500 2.70	2.000 6.76	3.500 14.87	5.00 4.06		
0.583 4.06	2.083 8.11	3.583 6.76	5.08 2.70		
0.667 4.06	2.167 8.11	3.667 6.76	5.17 2.70		
0.750 4.06	2.250 8.11	3.750 6.76	5.25 2.70		
0.833 4.06	2.333 8.11	3.833 6.76	5.33 2.70		
0.917 4.06	2.417 8.11	3.917 6.76	5.42 2.70		
1.000 4.06	2.500 8.11	4.000 6.76	5.50 2.70		
1.083 4.06	2.583 40.56	4.083 5.41	5.58 2.70		
1.167 4.06	2.667 40.56	4.167 5.41	5.67 2.70		
1.250 4.06	2.750 73.01	4.250 5.41	5.75 2.70		
1.333 4.06	2.833 73.01	4.333 5.41	5.83 2.70		
1.417 4.06	2.917 105.46	4.417 5.41	5.92 2.70		
1.500 4.06	3.000 105.46	4.500 5.41	6.00 2.70		

Max.Eff.Inten.(mm/hr)= 105.46 28.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.72 (ii) 17.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.06

PEAK FLOW (cms)= 0.37 0.03 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.25 0.394 (iii)  
RUNOFF VOLUME (mm)= 61.60 17.04 46.00  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6122)  
ID= 1 DT= 5.0 min

Area (ha)= 2.18  
Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

Surface Area (ha)	IMPERVIOUS (ha)	PERVIOUS (i)
2.05	2.05	0.13
6.00	6.00	8.00
1.00	1.00	1.00
120.55	120.55	40.00
0.013	0.013	0.250

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

TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN	TIME RAIN
hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr	hrs mm/hr
0.083 2.70	1.583 6.76	3.083 14.87	4.58 4.06		
0.167 2.70	1.667 6.76	3.167 14.87	4.67 4.06		
0.250 2.70	1.750 6.76	3.250 14.87	4.75 4.06		
0.333 2.70	1.833 6.76	3.333 14.87	4.83 4.06		
0.417 2.70	1.917 6.76	3.417 14.87	4.92 4.06		
0.500 2.70	2.000 6.76	3.500 14.87	5.00 4.06		
0.583 4.06	2.083 8.11	3.583 6.76	5.08 2.70		
0.667 4.06	2.167 8.11	3.667 6.76	5.17 2.70		
0.750 4.06	2.250 8.11	3.750 6.76	5.25 2.70		
0.833 4.06	2.333 8.11	3.833 6.76	5.33 2.70		
0.917 4.06	2.417 8.11	3.917 6.76	5.42 2.70		
1.000 4.06	2.500 8.11	4.000 6.76	5.50 2.70		
1.083 4.06	2.583 40.56	4.083 5.41	5.58 2.70		
1.167 4.06	2.667 40.56	4.167 5.41	5.67 2.70		
1.250 4.06	2.750 73.01	4.250 5.41	5.75 2.70		
1.333 4.06	2.833 73.01	4.333 5.41	5.83 2.70		
1.417 4.06	2.917 105.46	4.417 5.41	5.92 2.70		
1.500 4.06	3.000 105.46	4.500 5.41	6.00 2.70		

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.80 (ii) 5.63 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 0.59 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.605 (iii)  
RUNOFF VOLUME (mm)= 61.60 17.04 58.93  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.87

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 1000)  
IN= 2--> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.180	0.605	3.00	58.93
2.180	0.048	3.58	58.46

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.89  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0946

ADD HYD ( 0493)  
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.18	0.048	3.58	58.46
1.26	0.027	3.58	58.11
3.44	0.075	3.58	58.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0493):	3.44	0.075	3.58	58.33
+ ID2= 2 ( 0662):	1.98	0.394	3.00	46.00
-----				
ID = 1 ( 0493):	5.42	0.438	3.00	53.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0319)	Routing time step (min)= 5.00
IN= 2--> OUT= 1	

----- DATA FOR SECTION (2135.9) -----				
Distance	Elevation	Manning		
0.00	92.50	0.0700		
36.57	92.00	0.0700		
90.03	91.00	0.0700		
124.58	90.00	0.0700 / 0.0350	Main Channel	
128.34	89.59	0.0350	Main Channel	
129.84	89.59	0.0350	Main Channel	
132.39	90.00	0.0350 / 0.0700	Main Channel	
163.76	91.00	0.0700		
187.47	91.00	0.0700		
203.83	91.00	0.0700		
306.44	92.00	0.0700		

----- TRAVEL TIME TABLE -----					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.32	0.08	
*TOTALS*			
PEAK FLOW (cms)=	0.10	0.01	0.107 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	
RUNOFF VOLUME (mm)=	61.60	27.90	54.17
TOTAL RAINFALL (mm)=	67.60	67.60	
RUNOFF COEFFICIENT =	0.91	0.41	0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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)= 2.49
STANDHYD ( 6102)	Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	1.94	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	128.84	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70

		----- hydrograph -----				<-pipe / channel->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL		
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)		
INFLOW : ID= 2 ( 0493)	5.42	0.44	3.00	53.83	0.21	0.67	
OUTFLOW: ID= 1 ( 0319)	5.42	0.21	3.08	53.82	0.14	0.51	

CALIB	Area (ha)= 0.44
STANDHYD ( 6162)	Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00
ID= 1 DT= 5.0 min	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	0.34	0.10
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	48.04
over (min)	5.00	10.00
Storage Coeff. (min)=	1.73 (ii)	13.38 (ii)

1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	192.38
over (min)	5.00	10.00
Storage Coeff. (min)=	2.91 (ii)	9.60 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.11

PEAK FLOW (cms)=	0.36	0.21	0.572 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	61.60	44.05	52.82
TOTAL RAINFALL (mm)=	67.60	67.60	
RUNOFF COEFFICIENT =	0.91	0.65	0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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)= 0.89
STANDHYD ( 6242)	Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00
ID= 1 DT= 5.0 min	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	0.69	0.20
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	77.03	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.04  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.14 (ii) 13.79 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.20 0.02 0.217 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 27.90 54.17  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.41 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0489)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6102):	2.49	0.572	3.00	52.82
+ ID2= 2 ( 6162):	0.44	0.107	3.00	54.17
ID = 3 ( 0489):	2.93	0.679	3.00	53.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.

0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 55.30  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.57 (ii) 13.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.31 0.06 0.358 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 31.83 51.17  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.47 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0318)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0319):	5.42	0.213	3.08	53.82
+ ID2= 2 ( 0447):	15.05	0.310	3.75	45.58
ID = 3 ( 0318):	20.47	0.470	3.50	47.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0489):	2.93	0.679	3.00	53.02
+ ID2= 2 ( 6242):	0.89	0.217	3.00	54.17
ID = 1 ( 0489):	3.82	0.896	3.00	53.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0490)	OVERFLOW IS OFF			
IN= 2--> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1760	0.2330
	0.0280	0.0927	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW: ID= 2 ( 0489)	3.820	0.896	3.00	53.29
OUTFLOW: ID= 1 ( 0490)	3.820	0.083	3.75	53.07

PEAK FLOW REDUCTION [Qout/Qin](%) = 9.21  
TIME SHIFT OF PEAK FLOW (min) = 45.00  
MAXIMUM STORAGE USED (ha.m.) = 0.1444

CALIB				
STANDHYD ( 6192)	Area (ha)=	1.64		
ID= 1 DT= 5.0 min	Total Imp(%) =	65.00	Dir. Conn.(%) =	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.07	0.57
Dep. Storage (mm)=	6.00	8.00
Average Slope (%) =	1.00	1.00
Length (m)=	104.56	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0318):	20.47	0.470	3.50	47.76
+ ID2= 2 ( 0490):	3.82	0.083	3.75	53.07
ID = 1 ( 0318):	24.29	0.552	3.58	48.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0318):	24.29	0.552	3.58	48.59
+ ID2= 2 ( 6192):	1.64	0.358	3.00	51.17
ID = 3 ( 0318):	25.93	0.739	3.00	48.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0127):	29.73	0.934	3.00	25.52
+ ID2= 2 ( 0318):	25.93	0.739	3.00	48.76
ID = 3 ( 0128):	55.66	1.673	3.00	36.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)				
3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0128):	55.66	1.673	3.00	36.35
+ ID2= 2 ( 0603):	111.60	1.507	4.58	18.86
ID = 1 ( 0128):	167.26	2.497	4.42	24.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)				
IN= 2--> OUT= 1	Routing time step (min)'	=	5.00	

----- DATA FOR SECTION (1414.9) -----  
Distance Elevation Manning

0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+03	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.26	2.50	4.42	24.68	1.96	0.09
OUTFLOW : ID= 1 ( 0604)	167.26	1.82	5.00	24.67	1.88	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	NASHYD ( 6041)	Area (ha)= 1.70	Curve Number (CN)= 79.0
ID= 1 DT= 5.0 min		Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 4.12	

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.017 (i)  
 TIME TO PEAK (hrs)= 7.583  
 RUNOFF VOLUME (mm)= 27.939  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.413

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

CALIB	STANDHYD ( 6042)	Area (ha)= 22.30	Dir. Conn.(%)= 53.00
ID= 1 DT= 5.0 min		Total Imp(%)= 65.00	

(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 ( 6041):	1.70	0.017	7.58	27.94
+ ID2= 2 ( 6042):	22.30	4.162	3.00	48.60
=====				
ID = 3 ( 0129):	24.00	4.162	3.00	47.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0129):	24.00	4.162	3.00	47.14
+ ID2= 2 ( 0604):	167.26	1.819	5.00	24.67
=====				
ID = 3 ( 0130):	191.26	4.757	3.00	27.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)	Routing time step (min)= 5.00
IN= 2--> OUT= 1	

----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100

Max.Eff.Inten.(mm/hr)=	105.46	91.39
over (min)	5.00	15.00
Storage Coeff. (min)=	5.62 (ii)	14.63 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.20	0.08
		*TOTALS*
PEAK FLOW (cms)=	3.25	1.10
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	61.60	33.95
TOTAL RAINFALL (mm)=	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

285.02 82.19 0.1100  
 336.56 82.53 0.1100  
 404.40 82.68 0.1100

0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)= 0.016 (i)  
 TIME TO PEAK (hrs)= 4.167  
 RUNOFF VOLUME (mm)= 26.217  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.388

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

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.26	4.76	3.00	27.49	0.98	0.32
OUTFLOW: ID= 1 ( 0605)	191.26	2.03	5.00	27.49	0.83	0.26

CALIB	STANDHYD ( 6112)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
		10.80	62.00	50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	6.70	4.10
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	268.33	40.00
Mannings n	0.013	0.250

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

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06

0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 79.47  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.52 (ii) 14.05 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.52 0.50 1.939 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 30.07 45.83  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.44 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0137)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6111):		0.60	0.016	4.17	26.22
+ ID2= 2 ( 6112):		10.80	1.939	3.00	45.83
=====					
ID = 3 ( 0137):		11.40	1.941	3.00	44.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0139)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0137):		11.40	1.941	3.00	44.80
+ ID2= 2 ( 0605):		191.26	2.032	5.00	27.49
=====					
ID = 3 ( 0139):		202.66	3.356	3.00	28.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	NASHYD ( 6051)	Area (ha)	Curve Number (CN)
		0.40	66.0
ID= 1 DT= 5.0 min	Ia (mm)	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)	1.31	

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.006 (i)  
 TIME TO PEAK (hrs)= 4.500  
 RUNOFF VOLUME (mm)= 18.645  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.276

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



CALIB  
STANDHYD ( 6052) | Area (ha)= 15.50  
ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 10.23 5.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 321.46 40.00  
Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.32	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 54.69  
over (min)= 5.00 20.00  
Storage Coeff. (min)= 5.04 (ii) 16.10 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 2.33 0.47 2.651 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 61.60 24.02 44.31  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.36 0.66

118.05 78.63 0.0700 Main Channel  
124.40 78.89 0.0700 / 0.1100 Main Channel  
132.18 79.61 0.1100  
139.34 79.23 0.1100  
144.67 79.43 0.1100  
149.63 79.98 0.1100  
153.42 79.79 0.1100  
158.56 80.58 0.1100  
176.89 81.15 0.1100

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.56	6.01	3.00	29.57	0.65	0.68
OUTFLOW: ID= 1 ( 0530)	218.56	4.65	3.08	29.57	0.59	0.64

CALIB  
STANDHYD ( 5302) | Area (ha)= 5.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.48 2.32  
Dep. Storage (mm)= 6.00 8.00

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131) | AREA QPEAK TPEAK R.V.  
| 1 + 2 = 3 | (ha) (cms) (hrs) (mm)  
ID1= 1 ( 0051): 0.40 0.006 4.50 18.64  
+ ID2= 2 ( 0052): 15.50 2.651 3.00 44.31  
===== ID = 3 ( 0131): 15.90 2.652 3.00 43.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0132) | AREA QPEAK TPEAK R.V.  
| 1 + 2 = 3 | (ha) (cms) (hrs) (mm)  
ID1= 1 ( 0131): 15.90 2.652 3.00 43.67  
+ ID2= 2 ( 0139): 202.66 3.356 3.00 28.46  
===== ID = 3 ( 0132): 218.56 6.009 3.00 29.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530) | Routing time step (min)= 5.00  
| IN= 2--> OUT= 1 |

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700 Main Channel

Average Slope (%)= 1.00 1.00  
Length (m)= 196.64 40.00  
Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.32	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 50.94  
over (min)= 5.00 20.00  
Storage Coeff. (min)= 3.75 (ii) 15.13 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.25 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.80 0.20 0.931 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 23.29 41.68  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.34 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530):	218.56	4.651	3.00	29.57
+ ID2= 2 ( 5302):	5.80	0.931	3.00	41.68
=====				
ID = 3 ( 0134):	224.36	5.187	3.00	29.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120):	274.04	8.642	3.00	32.68
+ ID2= 2 ( 0134):	224.36	5.187	3.00	29.88
=====				
ID = 3 ( 0135):	498.40	13.829	3.00	31.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)		Routing time step (min) = 5.00
IN= 2	OUT= 1	

<----- DATA FOR SECTION ( 40.0) ----->				
Distance	Elevation	Manning		
0.00	79.36	0.0900		
7.45	79.32	0.0900		
13.77	79.27	0.0900		
20.24	79.24	0.0900		
27.28	79.26	0.0900		
34.16	79.13	0.0900		
40.79	79.05	0.0900		
47.58	79.05	0.0900		
54.30	79.07	0.0900		
60.87	79.24	0.0900		
71.39	79.48	0.0900		
73.53	78.96	0.0900		
76.96	78.07	0.0900		
82.21	77.08	0.0900 / 0.0700	Main Channel	
85.82	76.28	0.0700	Main Channel	
89.97	76.89	0.0700	Main Channel	
91.35	77.38	0.0700 / 0.0900	Main Channel	
95.27	78.68	0.0900		
98.44	79.63	0.0900		
102.89	79.89	0.0900		

0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.187

PEAK FLOW (cms) = 0.142 (i)  
 TIME TO PEAK (hrs) = 5.000  
 RUNOFF VOLUME (mm) = 23.865  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.353

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

CALIB			
STANDHYD ( 5072)	Area (ha)	Dir. Conn.(%)	
ID= 1 DT= 5.0 min	40.50	45.00	30.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)	18.23		22.28
Dep. Storage (mm)	6.00		8.00
Average Slope (%)	1.00		1.00
Length (m)	519.62		40.00
Mannings n	0.013		0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70

<----- TRAVEL TIME TABLE ----->						
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)	
0.16	76.44	.113E+03	0.0	0.14	88.10	
0.32	76.60	.451E+03	0.1	0.23	55.50	
0.49	76.76	.101E+04	0.4	0.30	42.35	
0.65	76.92	.180E+04	0.9	0.37	34.57	
0.81	77.09	.276E+04	1.6	0.44	28.86	
0.97	77.25	.388E+04	2.7	0.52	24.37	
1.14	77.41	.516E+04	4.0	0.59	21.56	
1.30	77.57	.660E+04	5.7	0.66	19.26	
1.46	77.74	.822E+04	7.8	0.72	17.67	
1.62	77.90	.100E+05	10.1	0.77	16.48	
1.79	78.06	.120E+05	12.8	0.82	15.54	
1.95	78.22	.141E+05	15.9	0.87	14.74	
2.11	78.39	.163E+05	19.4	0.91	14.06	
2.27	78.55	.187E+05	23.2	0.95	13.47	
2.44	78.71	.212E+05	27.3	0.99	12.95	
2.60	78.87	.239E+05	31.9	1.02	12.50	
2.76	79.04	.267E+05	36.8	1.06	12.10	
2.92	79.20	.320E+05	39.4	0.94	13.56	
3.09	79.36	.409E+05	45.7	0.85	14.94	

<---- hydrograph ---->							<-pipe / channel->	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)			
INFLOW : ID= 2 ( 0135)	498.40	13.83	3.00	31.42	1.84	0.84		
OUTFLOW: ID= 1 ( 0507)	498.40	10.85	3.25	31.42	1.67	0.79		

CALIB			
NASHYD ( 5071)	Area (ha)	Curve Number (CN)	
ID= 1 DT= 5.0 min	8.40	74.0	
	Ia (mm)	# of Linear Res.(N)	3.00
	U.H. Tp(hrs)		1.72

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06

0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 73.24  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 6.72 (ii) 16.56 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

\*TOTALS\*  
 PEAK FLOW (cms) = 3.24 2.22 4.780 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.17 3.00  
 RUNOFF VOLUME (mm) = 61.60 28.60 38.50  
 TOTAL RAINFALL (mm) = 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.42 0.57

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.0 Ia = Dep. 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 ( 0121)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5071):	8.40	0.142	5.00	23.86
+ ID2= 2 ( 5072):	40.50	4.780	3.00	38.50
=====				
ID = 3 ( 0121):	48.90	4.790	3.00	35.99

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 ( 0121):	48.90	4.790	3.00	35.99









ec1ddec7-271e-42c3-a64d-0f2891450dd6\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\  
 ec1ddec7-271e-42c3-a64d-0f2891450dd6\

DATE: 04-10-2024 TIME: 01:34:51

USER:

COMMENTS:

\*\*\*\*\*  
 \*\* SIMULATION : 25yrIT6.stm \*\*  
 \*\*\*\*\*

READ STORM File: C:\Users\jannaormond\AppData\Local\Temp\  
 d550afd7-b542-4ce9-bff9-b1d2bb7f65fd\00d06e36  
 Ptotal= 81.60 mm Comments: Mount Hope-6 hour SCS Distribution Desig

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.26	1.50	8.16	3.00	17.95	4.50	4.90
0.17	3.26	1.67	8.16	3.17	17.95	4.67	4.90
0.33	3.26	1.83	8.16	3.33	17.95	4.83	4.90
0.50	4.90	2.00	9.79	3.50	8.16	5.00	3.26
0.67	4.90	2.17	9.79	3.67	8.16	5.17	3.26
0.83	4.90	2.33	9.79	3.83	8.16	5.33	3.26
1.00	4.90	2.50	48.96	4.00	6.53	5.50	3.26
1.17	4.90	2.67	88.13	4.17	6.53	5.67	3.26
1.33	4.90	2.83	127.30	4.33	6.53	5.83	3.26

CALIB  
 NASHYD ( 5011) Area (ha)= 80.20 Curve Number (CN)= 65.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.85

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 2.505 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 25.750  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.316

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

CALIB  
 STANDHYD ( 5012) Area (ha)= 37.32  
 ID= 1 DT= 5.0 min Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.18	23.14
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	498.80	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr)= 127.30 73.75  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 6.08 (ii) 15.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.19 0.07  
 \*TOTALS\*  
 PEAK FLOW (cms)= 2.94 2.36 4.560 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 30.20 41.09  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.37 0.50

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5011): 80.20 2.505 3.83 25.75  
 + ID2= 2 ( 5012): 37.32 4.560 3.00 41.09  
 ID = 3 ( 0100): 117.52 5.124 3.00 30.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2----> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION (1537.5) -----

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	
187.19	88.84	0.1100	
211.21	88.88	0.1100	

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.93	21.56
1.21	88.05	.150E+05	7.1	0.96	20.43
1.33	88.17	.233E+05	10.6	0.98	19.49
1.44	88.28	.346E+05	15.5	0.99	18.78
1.56	88.40	.484E+05	22.8	0.99	18.25
1.67	88.51	.634E+05	32.1	0.99	17.85
1.79	88.63	.807E+05	41.2	0.99	17.52

1.90 88.74 .101E+06 54.6 0.64 30.77  
 2.02 88.86 .124E+06 64.7 0.62 31.85

<--- hydrograph ---> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0100) 117.52 5.12 3.00 30.62 1.13 0.61  
 OUTFLOW: ID= 1 ( 0502) 117.52 3.73 3.83 30.62 1.04 0.75

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

CALIB  
 NASHYD ( 5021) Area (ha)= 3.67 Curve Number (CN)= 68.8  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.43

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

CALIB  
 NASHYD ( 5691) Area (ha)= 2.30 Curve Number (CN)= 69.3  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.07

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.343 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 26.759  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.328

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.211 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 28.731  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.352

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

CALIB  
 STANDHYD ( 0575) Area (ha)= 0.78  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

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

CALIB  
 STANDHYD ( 5082) Area (ha)= 0.71  
 ID= 1 DT= 5.0 min Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.52 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 68.00 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 80.08  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 1.85 (ii) 11.35 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.16 0.03 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.182 (iii)  
 RUNOFF VOLUME (mm)= 75.60 30.25 59.27

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.51 0.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 72.11 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 72.24  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 1.91 (ii) 11.80 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.18 0.03 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.206 (iii)  
 RUNOFF VOLUME (mm)= 75.60 35.78 61.66  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.44 0.76

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL



TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.37 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.7 Ia = Dep. 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 ( 0568) | Area (ha)= 0.53  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 59.44 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 42.58

1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.88  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.89 (ii) 6.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.32 0.14

PEAK FLOW (cms)= 0.21 0.03 0.240 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 41.57 68.11  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5092) | Area (ha)= 1.73  
 ID= 1 DT= 5.0 min | Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.88 0.85  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 107.39 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90

over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.70 (ii) 13.92 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.88

PEAK FLOW (cms)= 0.12 0.01 0.133 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 25.39 58.01  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.31 0.71

\*TOTALS\*

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0510) | Area (ha)= 0.76  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.59 0.17  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 71.18 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26

0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.88  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.42 (ii) 11.74 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.31 0.12 0.410 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 41.57 58.79  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 0501) | Area (ha)= 6.23  
 ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.62 3.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 203.80 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 35.37  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.56 (ii) 16.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.91 0.20 1.040 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 21.28 44.09  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.26 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.4 Ia = Dep. 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 ( 5282) | Area (ha)= 2.08  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
 -----  
 IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 84.64  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.56 (ii) 11.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.48 0.10 0.563 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 41.96 63.82  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 0481) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0501): 6.23 1.040 3.00 44.09  
 + ID2= 2 ( 5021): 3.67 0.211 3.33 28.73  
 =====  
 ID = 3 ( 0481): 9.90 1.154 3.00 38.40  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 9.90 1.154 3.00 38.40  
 + ID2= 2 ( 5082): 0.71 0.182 3.00 59.27  
 =====  
 ID = 1 ( 0481): 10.61 1.336 3.00 39.80  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0481): 10.61 1.336 3.00 39.80  
 + ID2= 2 ( 5092): 1.73 0.410 3.00 58.79  
 =====  
 ID = 3 ( 0481): 12.34 1.746 3.00 42.46  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 12.34 1.746 3.00 42.46  
 + ID2= 2 ( 0510): 0.76 0.240 3.00 68.11  
 =====  
 ID = 1 ( 0481): 13.10 1.985 3.00 43.95  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0481): 13.10 1.985 3.00 43.95  
 + ID2= 2 ( 5282): 2.08 0.563 3.00 63.82  
 =====  
 ID = 3 ( 0481): 15.18 2.548 3.00 46.67  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 15.18 2.548 3.00 46.67  
 + ID2= 2 ( 0568): 0.53 0.133 3.00 58.01  
 =====  
 ID = 1 ( 0481): 15.71 2.681 3.00 47.05  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0481): 15.71 2.681 3.00 47.05  
 + ID2= 2 ( 5691): 2.30 0.343 3.00 26.76  
 =====  
 ID = 3 ( 0481): 18.01 3.024 3.00 44.46  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0481) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 18.01 3.024 3.00 44.46  
 + ID2= 2 ( 0575): 0.78 0.206 3.00 61.66  
 =====  
 ID = 1 ( 0481): 18.79 3.230 3.00 45.17  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
CALIB

CALIB  
STANDHYD ( 0524) | Area (ha)= 7.22 Curve Number (CN)= 80.7  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.20

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 1.012 (i)  
TIME TO PEAK (hrs)= 3.083  
RUNOFF VOLUME (mm)= 40.194  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.493

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

CALIB  
STANDHYD ( 0522) | Area (ha)= 3.31 Curve Number (CN)= 63.1  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.16

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

---- TRANSFORMED HYETOGRAPH ----

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 42.58  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.48 (ii) 14.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.43 0.05 0.467 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 25.39 58.02  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.31 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0519) | Area (ha)= 2.08  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.299 (i)  
TIME TO PEAK (hrs)= 3.000  
RUNOFF VOLUME (mm)= 24.249  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.297

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

CALIB  
STANDHYD ( 0580) | Area (ha)= 1.87  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.22 0.65  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 111.65 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 40.75  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.56 (ii) 15.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.48 0.05 0.508 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 24.35 57.66  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.30 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 48.76  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.45 (ii) 7.21 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*  
 PEAK FLOW (cms)= 0.49 0.04 0.533 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 24.35 64.32  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.30 0.79

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 63.0 Ia = Dep. 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 ( 0298) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0519): 2.08 0.508 3.00 57.66  
 + ID2= 2 ( 0529): 1.80 0.533 3.00 64.32  
 ID = 3 ( 0298): 3.88 1.041 3.00 60.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0298) |  
 3 + 2 = 1 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 3 ( 0298): 3.88 1.041 3.00 60.75  
 + ID2= 2 ( 0580): 1.87 0.467 3.00 58.02  
 ID = 1 ( 0298): 5.75 1.508 3.00 59.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0296) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0298): 5.75 1.508 3.00 59.86  
 + ID2= 2 ( 0522): 3.31 0.299 3.00 24.25  
 ID = 3 ( 0296): 9.06 1.807 3.00 46.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |  
 STANDHYD ( 0523) | Area (ha)= 6.61  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 154.85  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.62 (ii) 10.91 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.14 0.45 1.525 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 39.60 57.60  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.49 0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0291) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0296): 9.06 1.807 3.00 46.85  
 + ID2= 2 ( 0523): 6.61 1.525 3.00 57.60  
 ID = 3 ( 0291): 15.67 3.333 3.00 51.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |  
 STANDHYD ( 0525) | Area (ha)= 1.45  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.94 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 98.32 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 71.29

over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.30 (ii) 12.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.33 0.06 0.381 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 35.32 61.50  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43 0.75

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0304) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0291): 15.67 3.333 3.00 51.39  
 + ID2= 2 ( 0525): 1.45 0.381 3.00 61.50  
 =====  
 ID = 3 ( 0304): 17.12 3.713 3.00 52.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0295) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0304): 17.12 3.713 3.00 52.24  
 + ID2= 2 ( 0524): 7.22 1.012 3.08 40.19  
 =====  
 ID = 3 ( 0295): 24.34 4.650 3.00 48.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0527) |  
ID= 1 DT= 5.0 min
 Area (ha)= 1.68  
 Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.28 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 105.83 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 207.52  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.40 (ii) 8.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.12

\*TOTALS\*  
 PEAK FLOW (cms)= 0.31 0.17 0.480 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 54.26 65.36  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.66 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.2 Ia = Dep. 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 ( 0301) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0295): 24.34 4.650 3.00 48.67  
 + ID2= 2 ( 0527): 1.68 0.480 3.00 65.36  
 =====  
 ID = 3 ( 0301): 26.02 5.130 3.00 49.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0520) |  
ID= 1 DT= 5.0 min
 Area (ha)= 2.27  
 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.38 0.89  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 123.02 40.00  
 Mannings n = 0.013 0.250

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

Max.Eff.Inten.(mm/hr)= 127.30 75.92  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.63 (ii) 12.33 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.49 0.11 0.578 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 37.60 60.78  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.46 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.3 Ia = Dep. 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 ( 0305) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0301): 26.02 5.130 3.00 49.75  
 + ID2= 2 ( 0520): 2.27 0.578 3.00 60.78  
 =====  
 ID = 3 ( 0305): 28.29 5.708 3.00 50.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | RESERVOIR( 0445) |  
 | IN= 2----> OUT= 1 |  
DT= 5.0 min
 OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1400	0.8343
0.0195	0.2416	0.2360	1.0014
0.0700	0.5564	0.3420	1.6616

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 INFLOW : ID= 2 ( 0305) 28.290 5.708 3.00 50.63  
 OUTFLOW: ID= 1 ( 0445) 28.290 0.262 5.08 50.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.59  
 TIME SHIFT OF PEAK FLOW (min)=125.00

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

MAXIMUM STORAGE USED (ha.m.)= 1.1634

RUNOFF COEFFICIENT = 0.93 0.46 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. 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 ( 0526) Area (ha)= 0.94  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.73 0.21  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 79.16 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 76.18  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.02 (ii) 6.77 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.14

PEAK FLOW (cms)= 0.26 0.03  
TIME TO PEAK (hrs)= 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 37.73  
TOTAL RAINFALL (mm)= 81.60 81.60

\*TOTALS\*  
0.292 (iii)  
3.00  
67.26  
81.60

RESERVOIR( 0310) OVERFLOW IS OFF  
IN= 2----> OUT= 1  
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
INFLOW : ID= 2 ( 0526) 0.940 0.292 3.00 67.26  
OUTFLOW: ID= 1 ( 0310) 0.940 0.043 3.50 66.65

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.58  
TIME SHIFT OF PEAK FLOW (min)= 30.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0412

CALIB  
STANDHYD ( 0574) Area (ha)= 1.44  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.12 0.32  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 97.98 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 62.49  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.29 (ii) 7.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14

PEAK FLOW (cms)= 0.40 0.04  
TIME TO PEAK (hrs)= 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 31.02  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.38 0.81

\*TOTALS\*  
0.437 (iii)  
3.00  
65.79  
81.60

INFLOW : ID= 2 ( 0574) 1.440 0.437 3.00 65.79  
OUTFLOW: ID= 1 ( 0307) 1.440 0.065 3.50 65.41

PEAK FLOW REDUCTION [Qout/Qin](%)= 14.96  
TIME SHIFT OF PEAK FLOW (min)= 30.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0613

ADD HYD ( 0306)  
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0307):	1.44	0.065	3.50	65.41
+ ID2= 2 ( 0310):	0.94	0.043	3.50	66.65
=====				
ID = 3 ( 0306):	2.38	0.108	3.50	65.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0571) Area (ha)= 19.59  
ID= 1 DT= 5.0 min Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 13.32 6.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 361.39 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0307) OVERFLOW IS OFF  
IN= 2----> OUT= 1  
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

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

1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 106.47  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 5.01 (ii) 13.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.21 0.08

PEAK FLOW (cms)= 3.30 1.05 4.173 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 34.51 55.05  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.42 0.67

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.6 Ia = Dep. 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 ( 0572) | Area (ha)= 11.31  
ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 8.03	3.28
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 274.59	40.00
Mannings n = 0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90

STANDHYD ( 0573) | Area (ha)= 2.66  
ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 1.60	1.06
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 133.17	40.00
Mannings n = 0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 58.06  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.75 (ii) 13.55 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.56 0.11 0.653 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 34.03 58.97  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.42 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 161.29  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.25 (ii) 11.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.23 0.09

PEAK FLOW (cms)= 1.94 0.93 2.736 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 48.02 61.81  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.59 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0314)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 0571): 19.59 4.173 3.00 55.05  
+ ID2= 2 ( 0572): 11.31 2.736 3.00 61.81  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

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

ADD HYD ( 0317)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 0314): 30.90 6.909 3.00 57.53  
+ ID2= 2 ( 0573): 2.66 0.653 3.00 58.97  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0446) | OVERFLOW IS OFF  
IN= 2--> OUT= 1  
DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.2300	1.1312
0.0230	0.3704	0.2810	1.3850
0.0900	0.8066	0.4120	2.2335

INFLOW : ID= 2 ( 0317)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	33.560	7.562	3.00	57.64
OUTFLOW: ID= 1 ( 0446)		0.314	5.17	56.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.16  
TIME SHIFT OF PEAK FLOW (min)=130.00  
MAXIMUM STORAGE USED (ha.m.)= 1.6003

ADD HYD ( 0102)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 0306): 2.38 0.108 3.50 65.90  
+ ID2= 2 ( 0445): 28.29 0.262 5.08 50.42  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	30.67	0.349	3.58	51.62
+ ID2= 2 ( 0446):	33.56	0.314	5.17	56.97
=====				
ID = 1 ( 0102):	64.23	0.645	4.00	54.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	64.23	0.645	4.00	54.41
+ ID2= 2 ( 0481):	18.79	3.230	3.00	45.17
=====				
ID = 3 ( 0102):	83.02	3.496	3.00	52.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	83.02	3.496	3.00	52.32
+ ID2= 2 ( 0502):	117.52	3.728	3.83	30.62
=====				
ID = 1 ( 0102):	200.54	5.418	3.00	39.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.079

PEAK FLOW (cms) = 0.065 (i)  
TIME TO PEAK (hrs) = 3.833  
RUNOFF VOLUME (mm) = 30.543  
TOTAL RAINFALL (mm) = 81.600  
RUNOFF COEFFICIENT = 0.374

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

CALIB  
STANDHYD ( 5032) | Area (ha) = 12.20  
ID= 1 DT= 5.0 min | Total Imp(%) = 59.00 Dir. Conn.(%) = 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	7.20	5.00
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	285.19	40.00
Mannings n	0.013	0.250

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

140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	1.30E+04	3.1	0.89	6.93
1.21	85.42	1.77E+04	5.0	1.06	5.87
1.41	85.62	2.34E+04	7.4	1.17	5.28
1.62	85.83	3.00E+04	10.2	1.27	4.89
1.83	86.04	3.76E+04	13.6	1.35	4.60
2.03	86.24	4.62E+04	17.6	1.42	4.37
2.24	86.45	5.60E+04	22.1	1.47	4.22
2.45	86.66	6.95E+04	27.6	1.48	4.20
2.66	86.87	9.25E+04	31.2	1.25	4.94
2.86	87.07	1.68E+05	43.1	0.96	6.48
3.07	87.28	2.97E+05	67.7	0.85	7.30
3.28	87.49	4.56E+05	103.1	0.84	7.38
3.48	87.69	6.63E+05	159.6	0.89	6.93
3.69	87.90	9.07E+05	232.4	0.92	6.77

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0102)	200.54	5.42	3.00	39.60	1.24	1.07
OUTFLOW: ID= 1 ( 0503)	200.54	4.99	3.50	39.60	1.20	1.05

CALIB  
NASHYD ( 5031) | Area (ha) = 1.70 Curve Number (CN) = 71.0  
ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
U.H. Tp(hrs) = 0.82

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr) = 127.30 over (min) = 5.00

Storage Coeff. (min) = 4.35 (ii) 13.26 (ii)

Unit Hyd. Tpeak (min) = 5.00

Unit Hyd. peak (cms) = 0.23 0.08

PEAK FLOW (cms) = 1.96 0.75 \*TOTALS\*

TIME TO PEAK (hrs) = 3.00 3.08 3.00

RUNOFF VOLUME (mm) = 75.60 36.53 54.89

TOTAL RAINFALL (mm) = 81.60 81.60 81.60

RUNOFF COEFFICIENT = 0.93 0.45 0.67

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 71.0 Ia = Dep. 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 ( 0103)  
1 + 2 = 3 | AREA (ha) = 1.70 QPEAK (cms) = 0.065 TPEAK (hrs) = 3.83 R.V. (mm) = 30.54  
ID1= 1 ( 5031):



+ ID2= 2 ( 5032): 12.20 2.582 3.00 54.89  
 ID = 3 ( 0103): 13.90 2.598 3.00 51.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0103): 13.90 2.598 3.00 51.92  
 + ID2= 2 ( 0503): 200.54 4.987 3.50 39.60  
 ID = 3 ( 0104): 214.44 7.082 3.00 40.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
0.34	82.19	.135E+03	0.2	0.34
0.45	82.30	.312E+03	0.4	0.32
0.57	82.42	.116E+04	1.2	0.28
0.68	82.53	.287E+04	3.5	0.32
0.79	82.64	.549E+04	7.0	0.33
0.91	82.76	.101E+05	14.9	0.39
1.02	82.87	.155E+05	27.5	0.47
1.13	82.98	.214E+05	45.2	0.55
1.25	83.10	.277E+05	67.2	0.64
1.36	83.21	.344E+05	93.6	0.71
1.47	83.32	.426E+05	125.3	0.77
1.59	83.44	.516E+05	162.2	0.82
1.70	83.55	.620E+05	204.2	0.86
1.81	83.66	.747E+05	254.0	0.89
1.95	83.80	.924E+05	324.9	0.92
2.08	83.93	.113E+06	411.3	0.95
2.21	84.06	.135E+06	515.5	1.00

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	214.44	7.08	3.00	40.40	0.80	0.33
OUTFLOW: ID= 1 ( 0504)	214.44	5.52	3.58	40.40	0.75	0.33

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.89

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26

1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.013

PEAK FLOW (cms)= 0.010 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 28.042  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.344

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

CALIB  
 STANDHYD ( 5042) Area (ha)= 7.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.88	2.52
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	222.11	40.00
Mannings n =	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26

1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 93.86  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.74 (ii) 12.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.38 0.38 1.699 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 34.92 56.89  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43 0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5041): 0.30 0.010 3.92 28.04  
 + ID2= 2 ( 5042): 7.40 1.699 3.00 56.89  
 ID = 3 ( 0105): 7.70 1.702 3.00 55.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0105): 7.70 1.702 3.00 55.76  
 + ID2= 2 ( 0504): 214.44 5.519 3.58 40.40  
 ID = 3 ( 0106): 222.14 5.871 3.50 40.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5211) Area (ha)= 1.90 Curve Number (CN)= 77.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.95

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.078 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 36.240  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.444

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

CALIB  
 STANDHYD ( 5212) Area (ha)= 13.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 52.00 Dir. Conn.(%)= 40.00

Surface Area (ha)= IMPERVIOUS 7.18 PERVIOUS (i) 6.62

ADD HYD ( 0112)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 ( 5211)	1.90	0.078	4.00	36.24
+ 2 ( 5212)	13.80	2.816	3.00	55.21
=====				
ID = 3 ( 0112)	15.70	2.832	3.00	52.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 ( 0106)	222.14	5.871	3.50	40.93
+ 2 ( 0112)	15.70	2.832	3.00	52.91
=====				
ID = 3 ( 0114)	237.84	8.552	3.00	41.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2--> OUT= 1 | Routing time step (min)= 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	

Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 103.56  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 4.51 (ii) 13.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*

PEAK FLOW (cms)= 1.88 1.11 2.816 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 41.61 55.21  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

501.51 83.16 0.0900

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

hydrograph -----< pipe / channel ->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0114) 237.84 8.55 3.00 41.72 0.67 0.50  
 OUTFLOW: ID= 1 ( 0505) 237.84 7.88 3.08 41.72 0.64 0.49

CALIB  
 NASHYD ( 5051) Area (ha)= 1.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90

0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.056 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 28.047  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.344

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

CALIB  
 STANDHYD ( 5052) | Area (ha)= 14.60  
 ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 9.64 4.96  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 311.98 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90

0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 93.86  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.59 (ii) 13.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 2.68 0.73 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 3.288 (iii)  
 RUNOFF VOLUME (mm)= 75.60 34.92 56.89  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43 0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 5051):	1.30	0.056	3.58	28.05
+ ID2= 2 ( 5052):	14.60	3.288	3.00	56.89
-----	-----	-----	-----	-----
ID = 3 ( 0107):	15.90	3.307	3.00	54.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
--	------	-------	-------	------

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0107):	15.90	3.307	3.00	54.53
+ ID2= 2 ( 0505):	237.84	7.875	3.08	41.72
-----	-----	-----	-----	-----
ID = 3 ( 0108):	253.74	10.361	3.00	42.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning		
0.00	81.42	0.0900		
7.45	81.36	0.0900		
32.34	80.38	0.0900		
45.97	80.05	0.0900		
65.23	79.93	0.0900		
84.49	80.35	0.0900		
113.49	80.02	0.0900		
136.48	80.07	0.0900		
188.81	79.81	0.0900		
197.86	79.25	0.0900 / 0.0700	Main Channel	
200.70	78.22	0.0700	Main Channel	
203.29	79.35	0.0700 / 0.0900	Main Channel	
204.01	79.67	0.0900		
236.47	80.40	0.0900		
277.80	80.48	0.0900		
305.35	80.37	0.0900		
346.67	80.41	0.0900		
387.99	80.33	0.0900		
415.54	80.53	0.0900		
447.88	80.49	0.0900		

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12

1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0108)	253.74	10.36	3.00	42.52	1.58	1.16
OUTFLOW : ID= 1 ( 0506)	253.74	9.66	3.08	42.52	1.55	1.19

CALIB  
 NASHYD ( 5061) | Area (ha)= 3.90 Curve Number (CN)= 10  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.183 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 30.544  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.374

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

CALIB  
 STANDHYD ( 5062) Area (ha)= 7.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 99.84  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.80 (ii) 12.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.25 0.08  
 PEAK FLOW (cms)= 1.43 0.45 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 1.801 (iii)  
 RUNOFF VOLUME (mm)= 75.60 37.42 3.00  
 TOTAL RAINFALL (mm)= 81.60 81.60 57.66  
 RUNOFF COEFFICIENT = 0.93 0.46 81.60 0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5061): 3.90 0.183 3.58 30.54  
 + ID2= 2 ( 5062): 7.80 1.801 3.00 57.66  
 ID = 3 ( 0109): 11.70 1.866 3.00 48.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0109): 11.70 1.866 3.00 48.62  
 + ID2= 2 ( 0506): 253.74 9.663 3.08 42.52  
 ID = 3 ( 0110): 265.44 10.739 3.08 42.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.42

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.017 (i)  
 TIME TO PEAK (hrs)= 4.583  
 RUNOFF VOLUME (mm)= 26.492  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.325

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

CALIB  
 STANDHYD ( 5102) Area (ha)= 0.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.45 0.45  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 77.46 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.58  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.99 (ii) 11.33 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.11 0.06 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.164 (iii)  
 RUNOFF VOLUME (mm)= 75.60 32.32 47.46  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.40 0.58

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5101): 0.80 0.017 4.58 26.49  
 + ID2= 2 ( 5102): 0.90 0.164 3.00 47.46  
 ID = 3 ( 0115): 1.70 0.166 3.00 37.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0115)	1.70	0.17	3.00	37.59	0.03	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.12	3.08	37.59	0.02	0.24

CALIB  
NASHYD ( 5111) | Area (ha)= 1.90 Curve Number (CN)= 67.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.56

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.129

PEAK FLOW (cms)= 0.085 (i)  
TIME TO PEAK (hrs)= 3.500  
RUNOFF VOLUME (mm)= 27.260  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.334

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

CALIB  
STANDHYD ( 5112) | Area (ha)= 1.10  
ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.55 0.55  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 85.63 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr)= 127.30 94.85  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.11 (ii) 10.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.14 0.09 0.211 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 36.66 50.28  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.45 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0116)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 5111): 1.90 0.085 3.50 27.26  
+ ID2= 2 ( 5112): 1.10 0.211 3.00 50.28  
===== ID = 3 ( 0116): 3.00 0.245 3.00 35.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 0116): 3.00 0.245 3.00 35.70  
+ ID2= 2 ( 0511): 1.70 0.120 3.08 37.59  
===== ID = 3 ( 0117): 4.70 0.360 3.00 36.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71

0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.023  
 PEAK FLOW (cms)= 0.021 (i)  
 TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 30.541  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.374

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

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

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0117)	4.70	0.36	3.00	36.39	0.55	0.37
OUTFLOW: ID= 1 ( 0512)	4.70	0.22	3.33	36.38	0.46	0.32

CALIB	STANDHYD ( 5122)	Area (ha)= 3.20
ID= 1 DT= 5.0 min	Total Imp(%)= 60.00	Dir. Conn.(%)= 47.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.92		1.28
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	146.06		40.00
Mannings n	= 0.013		0.250

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

CALIB	NASHYD ( 5121)	Area (ha)= 0.70	Curve Number (CN)= 71.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
U.H. Tp(hrs)=	1.14		

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26

1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min)= 5.00  
 Storage Coeff. (min)= 2.91 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.28

\*TOTALS\*  
 PEAK FLOW (cms)= 0.53  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 75.60  
 TOTAL RAINFALL (mm)= 81.60  
 RUNOFF COEFFICIENT = 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5121):		0.70	0.021	4.25	30.54
+ ID2= 2 ( 5122):		3.20	0.703	3.00	55.20
ID = 3 ( 0118):		3.90	0.706	3.00	50.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):		3.90	0.706	3.00	50.77
+ ID2= 2 ( 0512):		4.70	0.220	3.33	36.38
ID = 3 ( 0119):		8.60	0.870	3.00	42.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0110):		265.44	10.739	3.08	42.79
+ ID2= 2 ( 0119):		8.60	0.870	3.00	42.91
ID = 3 ( 0120):		274.04	11.310	3.08	42.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	NASHYD ( 6011)	Area (ha)= 44.10	Curve Number (CN)= 62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
U.H. Tp(hrs)=	0.83		

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 2.027  
 PEAK FLOW (cms)= 1.276 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

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

CALIB		Area (ha)= 11.00	
STANDHYD ( 6012)		Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00	
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.08	7.92	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	270.80	40.00	
Mannings n	= 0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	52.38
over (min)	5.00	20.00
Storage Coeff. (min)=	4.22 (ii)	15.47 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.24	0.07
		*TOTALS*
PEAK FLOW (cms)=	0.60	0.69
TIME TO PEAK (hrs)=	3.00	1.070 (iii)
RUNOFF VOLUME (mm)=	75.60	26.83
TOTAL RAINFALL (mm)=	81.60	81.60

1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)=	1.753
PEAK FLOW (cms)=	1.141 (i)
TIME TO PEAK (hrs)=	4.000
RUNOFF VOLUME (mm)=	23.626
TOTAL RAINFALL (mm)=	81.600
RUNOFF COEFFICIENT =	0.290

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

CALIB		Area (ha)= 12.90	
STANDHYD ( 6022)		Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00	
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	4.51	8.38	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	293.26	40.00	
Mannings n	= 0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26

RUNOFF COEFFICIENT = 0.93 0.33 0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)		AREA		QPEAK		TPEAK		R.V.	
1 + 2 = 3		(ha)		(cms)		(hrs)		(mm)	
ID1= 1 ( 6011):		44.10		1.276		3.83		23.63	
+ ID2= 2 ( 6012):		11.00		1.070		3.00		34.64	
ID = 3 ( 0124):		55.10		1.597		3.50		25.82	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 43.60		Curve Number (CN)= 62.0	
NASHYD ( 6021)		Ia (mm)= 8.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 0.95			

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26

1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	53.84
over (min)	5.00	20.00
Storage Coeff. (min)=	4.42 (ii)	15.55 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.23	0.07
		*TOTALS*
PEAK FLOW (cms)=	1.01	0.74
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	75.60	27.16
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.33

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0125)		AREA		QPEAK		TPEAK		R.V.	
1 + 2 = 3		(ha)		(cms)		(hrs)		(mm)	
ID1= 1 ( 6021):		43.60		1.141		4.00		23.63	
+ ID2= 2 ( 6022):		12.90		1.520		3.00		38.30	
ID = 3 ( 0125):		56.50		1.733		3.00		26.98	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)		AREA		QPEAK		TPEAK		R.V.	
1 + 2 = 3		(ha)		(cms)		(hrs)		(mm)	
ID1= 1 ( 0124):		55.10		1.597		3.50		25.82	
+ ID2= 2 ( 0125):		56.50		1.733		3.00		26.98	
ID = 3 ( 0126):		111.60		3.093		3.00		26.41	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	3.09	3.00	26.41	0.65	0.23
OUTFLOW: ID= 1 ( 0603)	111.60	2.16	4.58	26.40	0.59	0.22

CALIB  
NASHYD ( 6031) Area (ha)= 19.00 Curve Number (CN)= 72.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.32

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.522 (i)  
TIME TO PEAK (hrs)= 4.417  
RUNOFF VOLUME (mm)= 31.425  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.385

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

CALIB  
STANDHYD ( 6032) Area (ha)= 10.73  
ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	3.00	7.73
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	267.46	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr)= 127.30 over (min)= 5.00  
Storage Coeff. (min)= 4.19 (ii) 13.53 (iii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.55 1.01 1.390 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 35.32 41.36  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.43 0.51

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

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0127)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.522	4.42	31.42
+ ID2= 2 ( 6032):	10.73	1.390	3.00	41.36
=====				
ID = 3 ( 0127):	29.73	1.451	3.00	35.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 6131) Area (ha)= 1.77 Curve Number (CN)= 66.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.22

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26



1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Unit Hyd Qpeak (cms) = 0.302

PEAK FLOW (cms) = 0.146 (i)  
 TIME TO PEAK (hrs) = 3.083  
 RUNOFF VOLUME (mm) = 26.463  
 TOTAL RAINFALL (mm) = 81.600  
 RUNOFF COEFFICIENT = 0.324

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

CALIB  
 STANDHYD ( 6222) | Area (ha) = 2.02  
 ID= 1 DT= 5.0 min | Total Imp(%) = 78.00 Dir. Conn.(%) = 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 1.58 0.44  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 116.05 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 59.51  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.54 (ii) 7.29 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.14

\*TOTALS\*  
 PEAK FLOW (cms) = 0.55 0.05 0.608 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.00 3.00  
 RUNOFF VOLUME (mm) = 75.60 29.57 65.47  
 TOTAL RAINFALL (mm) = 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.36 0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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 ( 6142) | Area (ha) = 1.50  
 ID= 1 DT= 5.0 min | Total Imp(%) = 69.00 Dir. Conn.(%) = 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 1.04 0.47  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 100.00 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

0.917 4.90 | 2.417 9.79 | 3.917 8.16 | 5.42 3.26  
 1.000 4.90 | 2.500 9.79 | 4.000 8.16 | 5.50 3.26  
 1.083 4.90 | 2.583 48.96 | 4.083 6.53 | 5.58 3.26  
 1.167 4.90 | 2.667 48.96 | 4.167 6.53 | 5.67 3.26  
 1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 110.59  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.32 (ii) 10.67 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms) = 0.26 0.09 0.339 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 75.60 34.77 55.18  
 TOTAL RAINFALL (mm) = 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43 0.68

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6152) | Area (ha) = 2.14  
 ID= 1 DT= 5.0 min | Total Imp(%) = 78.00 Dir. Conn.(%) = 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 1.67 0.47  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 119.44 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90

0.250 3.26 | 1.750 8.16 | 3.250 17.95 | 4.75 4.90  
 0.333 3.26 | 1.833 8.16 | 3.333 17.95 | 4.83 4.90  
 0.417 3.26 | 1.917 8.16 | 3.417 17.95 | 4.92 4.90  
 0.500 3.26 | 2.000 8.16 | 3.500 17.95 | 5.00 4.90  
 0.583 4.90 | 2.083 9.79 | 3.583 8.16 | 5.08 3.26  
 0.667 4.90 | 2.167 9.79 | 3.667 8.16 | 5.17 3.26  
 0.750 4.90 | 2.250 9.79 | 3.750 8.16 | 5.25 3.26  
 0.833 4.90 | 2.333 9.79 | 3.833 8.16 | 5.33 3.26  
 0.917 4.90 | 2.417 9.79 | 3.917 8.16 | 5.42 3.26  
 1.000 4.90 | 2.500 9.79 | 4.000 8.16 | 5.50 3.26  
 1.083 4.90 | 2.583 48.96 | 4.083 6.53 | 5.58 3.26  
 1.167 4.90 | 2.667 48.96 | 4.167 6.53 | 5.67 3.26  
 1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 59.51  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.58 (ii) 7.34 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.13

\*TOTALS\*  
 PEAK FLOW (cms) = 0.59 0.06 0.644 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.00 3.00  
 RUNOFF VOLUME (mm) = 75.60 29.57 65.47  
 TOTAL RAINFALL (mm) = 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.36 0.80

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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 ( 6182) | Area (ha) = 1.49  
 ID= 1 DT= 5.0 min | Total Imp(%) = 78.00 Dir. Conn.(%) = 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 1.16 0.33  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 99.67 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min) 5.00  
 Storage Coeff. (min)= 2.31 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.30

PEAK FLOW (cms)= 0.26  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 75.60  
 TOTAL RAINFALL (mm)= 81.60  
 RUNOFF COEFFICIENT = 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.86  
 Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

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

CALIB  
 STANDHYD ( 6172)  
 ID= 1 DT= 5.0 min

Area (ha)= 2.31  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min) 5.00  
 Storage Coeff. (min)= 2.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.29

PEAK FLOW (cms)= 0.41  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 75.60

\*TOTALS\*  
 0.22 0.621 (iii)  
 3.00 3.00  
 48.17 61.88

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.81 0.05  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.72 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min) 5.00  
 Storage Coeff. (min)= 1.96 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.31

PEAK FLOW (cms)= 0.29  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 75.60  
 TOTAL RAINFALL (mm)= 81.60  
 RUNOFF COEFFICIENT = 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.59 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0342)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6142):	1.50	0.339	3.00	55.18
+ ID2= 2 ( 6152):	2.14	0.644	3.00	65.47
=====				
ID = 3 ( 0342):	3.64	0.983	3.00	61.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0342):	3.64	0.983	3.00	61.23
+ ID2= 2 ( 6172):	2.31	0.621	3.00	61.88
=====				
ID = 1 ( 0342):	5.95	1.605	3.00	61.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0342):	5.95	1.605	3.00	61.48
+ ID2= 2 ( 6182):	1.49	0.384	3.00	59.02
=====				
ID = 3 ( 0342):	7.44	1.989	3.00	60.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0342):	7.44	1.989	3.00	60.99
+ ID2= 2 ( 6222):	2.02	0.608	3.00	65.47
-----				
ID = 1 ( 0342):	9.46	2.597	3.00	61.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0342):	9.46	2.597	3.00	61.95
+ ID2= 2 ( 6302):	0.86	0.292	3.00	72.52
-----				
ID = 3 ( 0342):	10.32	2.889	3.00	62.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6212)	1.15	65.00	65.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.75	0.40
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	87.56	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26

0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	40.75	
over (min)	5.00	15.00	
Storage Coeff. (min)=	1.96 (ii)	14.40 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.08	
-----			
PEAK FLOW (cms)=	0.20	0.02	0.212 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	75.60	24.35	57.65
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.30	0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0488)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6212):	1.15	0.287	3.00	57.65
+ ID2= 2 ( 6232):	0.85	0.212	3.00	57.65
-----				
ID = 3 ( 0488):	2.00	0.499	3.00	57.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	40.75	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.14 (ii)	14.59 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.08	
-----			
PEAK FLOW (cms)=	0.26	0.03	0.287 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	75.60	24.35	57.65
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.30	0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6232)	0.85	65.00	65.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.55	0.30
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	75.28	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6262)	0.96	60.00	60.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.58	0.38
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	80.00	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	77.39	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.03 (ii)	11.66 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
-----			
PEAK FLOW (cms)=	0.20	0.05	0.245 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	75.60	38.33	60.68
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.47	0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0342):	10.32	2.889	3.00	62.83
+ ID2= 2 ( 0488):	2.00	0.499	3.00	57.65
ID = 3 ( 0346):	12.32	3.388	3.00	61.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0346):	12.32	3.388	3.00	61.99
+ ID2= 2 ( 6131):	1.77	0.146	3.08	26.46
ID = 1 ( 0346):	14.09	3.513	3.00	57.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0346):	14.09	3.513	3.00	57.53
+ ID2= 2 ( 6262):	0.96	0.245	3.00	60.68
ID = 3 ( 0346):	15.05	3.758	3.00	57.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0447)	OVERFLOW IS OFF	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2 ---> OUT= 1					
DT= 5.0 min		0.0000	0.0000	0.1070	0.3146

over (min)	5.00	5.00	
Storage Coeff. (min)	2.20 (ii)	4.83 (ii)	
Unit Hyd. Tpeak (min)	5.00	5.00	
Unit Hyd. peak (cms)	0.30	0.22	
			*TOTALS*
PEAK FLOW (cms)	0.42	0.01	0.427 (iii)
TIME TO PEAK (hrs)	3.00	3.00	
RUNOFF VOLUME (mm)	75.60	24.35	72.52
TOTAL RAINFALL (mm)	81.60	81.60	81.60
RUNOFF COEFFICIENT	0.93	0.30	0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR ( 0491)	OVERFLOW IS OFF	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2 ---> OUT= 1					
DT= 5.0 min		0.0000	0.0000	0.0580	0.0848
		0.0090	0.0366	0.0000	0.0000

INFLOW : ID= 2 ( 6202)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
OUTFLOW : ID= 1 ( 0491)	1.260	0.427	3.00	72.52
	1.260	0.039	3.58	71.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.11  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0662

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6062)	1.98	65.00	65.00
ID= 1 DT= 5.0 min			

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.29
Dep. Storage (mm)	6.00
Average Slope (%)	1.00
Length (m)	114.89
Mannings n	0.013

0.0150 0.1715 | 0.7100 0.8031

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0346)	15.050	3.758	3.00	57.73
OUTFLOW : ID= 1 ( 0447)	15.050	0.449	3.58	57.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.94  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.5913

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6202)	1.26	94.00	94.00
ID= 1 DT= 5.0 min			

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.18
Dep. Storage (mm)	6.00
Average Slope (%)	1.00
Length (m)	91.65
Mannings n	0.013

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26
Max.Eff.Inten.(mm/hr)=	127.30	48.76					

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26
Max.Eff.Inten.(mm/hr)=	127.30	40.74					
over (min)	5.00	15.00					
Storage Coeff. (min)	2.52 (ii)	14.96 (ii)					
Unit Hyd. Tpeak (min)	5.00	15.00					
Unit Hyd. peak (cms)	0.29	0.08					
			*TOTALS*				
PEAK FLOW (cms)	0.45	0.05	0.492 (iii)				
TIME TO PEAK (hrs)	3.00	3.17	3.00				
RUNOFF VOLUME (mm)	75.60	24.34	57.66				
TOTAL RAINFALL (mm)	81.60	81.60	81.60				
RUNOFF COEFFICIENT	0.93	0.30	0.71				

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6122)	2.18	94.00	94.00
ID= 1 DT= 5.0 min			

IMPERVIOUS 2.05 PERVIOUS (i) 0.13  
 Surface Area (ha)=  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 120.55 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 48.76  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.59 (ii) 5.22 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.16

\*TOTALS\*

PEAK FLOW (cms)= 0.72 0.01 0.734 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 24.35 72.52  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.30 0.89

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

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

RESERVOIR ( 1000) | OVERFLOW IS OFF

IN= 2----> OUT= 1

DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 6122)	2.180	0.734	3.00	72.52
OUTFLOW: ID= 1 ( 1000)	2.180	0.067	3.58	72.06

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.19  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1143

ADD HYD ( 0493)

1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1000):	2.18	0.067	3.58	72.06
+ ID2= 2 ( 0491):	1.26	0.039	3.58	71.71
=====				
ID = 3 ( 0493):	3.44	0.106	3.58	71.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)

3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0493):	3.44	0.106	3.58	71.93
+ ID2= 2 ( 0491):	1.98	0.492	3.00	57.66
=====				
ID = 1 ( 0493):	5.42	0.565	3.00	66.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0319)

IN= 2----> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0493)	5.42	0.56	3.00	66.72	0.23	0.71
OUTFLOW: ID= 1 ( 0319)	5.42	0.28	3.08	66.71	0.16	0.56

CALIB

STANDHYD ( 6162)

ID= 1 DT= 5.0 min

Area (ha)	Total Imp(%)	Dir. Conn.(%)
0.44	78.00	78.00

IMPERVIOUS 0.34 PERVIOUS (i) 0.10  
 Surface Area (ha)=  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 54.16 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 77.39  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 1.61 (ii) 6.36 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.32 0.15

\*TOTALS\*

PEAK FLOW (cms)= 0.12 0.02 0.138 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 38.33 67.39  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47 0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 6102) ID= 1 DT= 5.0 min	Area (ha)= 2.49 Total Imp(%)= 78.00	Dir. Conn.(%)= 50.00
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.94	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	128.84	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	244.24
over (min)	5.00	10.00
Storage Coeff. (min)=	2.70 (ii)	8.78 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.12
		*TOTALS*
PEAK FLOW (cms)=	0.44	0.28
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	75.60	56.86
		66.23

TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.70 0.81

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.3 Ia = Dep. 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 ( 6242) ID= 1 DT= 5.0 min	Area (ha)= 0.89 Total Imp(%)= 78.00	Dir. Conn.(%)= 78.00
--	--	----------------------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.69	0.20
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	77.03	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 77.39

over (min)	5.00	10.00
Storage Coeff. (min)=	1.98 (ii)	6.74 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.31	0.14
		*TOTALS*
PEAK FLOW (cms)=	0.24	0.03
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	75.60	38.33
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT	0.93	0.47
		0.83

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0489) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6102):	2.49	0.716	3.00	66.23
+ ID2= 2 ( 6162):	0.44	0.138	3.00	67.39
ID = 3 ( 0489):	2.93	0.854	3.00	66.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0489):	2.93	0.854	3.00	66.40
+ ID2= 2 ( 6242):	0.89	0.278	3.00	67.40
ID = 1 ( 0489):	3.82	1.131	3.00	66.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0490) IN= 2---> OUT= 1 DT= 5.0 min	OVERFLOW IS OFF
	OUTFLOW STORAGE   OUTFLOW STORAGE
	(cms) (ha.m.)   (cms) (ha.m.)
	0.0000 0.0000   0.1760 0.2330

0.0280 0.0927 | 0.0000 0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0489)	3.820	1.131	3.00	66.63
OUTFLOW: ID= 1 ( 0490)	3.820	0.117	3.58	66.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.37  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1775

CALIB STANDHYD ( 6192) ID= 1 DT= 5.0 min	Area (ha)= 1.64 Total Imp(%)= 65.00	Dir. Conn.(%)= 65.00
--	--	----------------------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.07	0.57
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	104.56	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 86.94

over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.38 (ii) 11.57 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.38 0.09 0.447 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 43.13 64.23  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.53 0.79

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0318) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0319): 5.42 0.285 3.08 66.71  
 + ID2= 2 ( 0447): 15.05 0.449 3.58 57.53  
 -----  
 ID = 3 ( 0318): 20.47 0.665 3.50 59.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0318) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0318): 20.47 0.665 3.50 59.96  
 + ID2= 2 ( 0490): 3.82 0.117 3.58 66.42  
 -----  
 ID = 1 ( 0318): 24.29 0.781 3.50 60.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0318) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0318): 24.29 0.781 3.50 60.98

172.02 85.29 0.1100  
 191.39 86.19 0.1100  
 270.18 85.78 0.1100  
 296.33 86.36 0.1100  
 324.34 86.68 0.1100  
 368.56 87.05 0.1100

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<----- hydrograph -----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0128) 167.26 3.51 4.42 33.33 2.14 0.09  
 OUTFLOW: ID= 1 ( 0604) 167.26 2.57 4.92 29.08 1.98 0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

-----  
 | CALIB |  
 | NASHYD ( 6041) | Area (ha)= 1.70 Curve Number (CN)= 79.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 -----  
 U.H. Tp(hrs)= 4.12

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

----- TRANSFORMED HYETOGRAPH -----

+ ID2= 2 ( 6192): 1.64 0.447 3.00 64.23  
 -----  
 ID = 3 ( 0318): 25.93 1.044 3.00 61.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0128) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0127): 29.73 1.451 3.00 35.01  
 + ID2= 2 ( 0318): 25.93 1.044 3.00 61.18  
 -----  
 ID = 3 ( 0128): 55.66 2.495 3.00 47.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0128) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0128): 55.66 2.495 3.00 47.20  
 + ID2= 2 ( 0603): 111.60 2.157 4.58 26.40  
 -----  
 ID = 1 ( 0128): 167.26 3.512 4.42 33.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0604) | Routing time step (min)'= 5.00  
 | IN= 2----> OUT= 1 |

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.023 (i)  
 TIME TO PEAK (hrs)= 7.500  
 RUNOFF VOLUME (mm)= 38.381  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.470

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

-----  
 | CALIB |  
 | STANDHYD ( 6042) | Area (ha)= 22.30  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.49 7.81  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 385.57 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
 hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr)= 127.30 120.63  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 5.21 (ii) 13.27 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.08

\*TOTALS\*

PEAK FLOW (cms)= 3.96 1.54 5.266 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 45.44 61.42  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.56 0.75

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6041):	1.70	0.023	7.50	38.38
+ ID2= 2 ( 6042):	22.30	5.266	3.00	61.42
-----				
ID = 3 ( 0129):	24.00	5.267	3.00	59.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0129):	24.00	5.267	3.00	59.79
+ ID2= 2 ( 0604):	167.26	2.572	4.92	29.08
-----				
ID = 3 ( 0130):	191.26	6.132	3.00	32.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)	
IN= 2---> OUT= 1	
Routing time step (min)= 5.00	

DATA FOR SECTION ( 801.4)			
Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.03	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

TRAVEL TIME TABLE					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50

0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.021  
 PEAK FLOW (cms)= 0.022 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 36.237  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.444

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

hydrograph		<-pipe / channel->				
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0130)	191.26	6.13	3.00	32.93	1.04	0.35
OUTFLOW: ID= 1 ( 0605)	191.26	2.83	5.00	32.89	0.88	0.28

CALIB	
NASHYD ( 6111)	
ID= 1 DT= 5.0 min	
Area (ha)= 0.60	Curve Number (CN)= 77.0
Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.08	

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

CALIB	
STANDHYD ( 6112)	
ID= 1 DT= 5.0 min	
Area (ha)= 10.80	Total Imp(%)= 62.00
	Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 6.70 4.10  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 268.33 40.00  
 Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26

TRANSFORMED HYETOGRAPH							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26



Max.Eff.Inten.(mm/hr)= 127.30 106.59  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.19 (ii) 12.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.85 0.72 2.456 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 40.78 58.19  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.50 0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0137) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6111): 0.60 0.022 4.08 36.24  
 + ID2= 2 ( 6112): 10.80 2.456 3.00 58.19  
 =====  
 ID = 3 ( 0137): 11.40 2.460 3.00 57.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0139) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0137): 11.40 2.460 3.00 57.03  
 + ID2= 2 ( 0605): 191.26 2.828 5.00 32.89  
 =====  
 ID = 3 ( 0139): 202.66 4.375 3.00 34.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 6051) | Area (ha)= 0.40 Curve Number (CN)= 66.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	17.95	5.08	3.26
0.667	4.90	2.167	9.79	3.667	17.95	5.17	3.26
0.750	4.90	2.250	9.79	3.750	17.95	5.25	3.26
0.833	4.90	2.333	9.79	3.833	17.95	5.33	3.26
0.917	4.90	2.417	9.79	3.917	17.95	5.42	3.26
1.000	4.90	2.500	9.79	4.000	17.95	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 89.28  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.67 (ii) 13.77 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 2.84 0.73 3.443 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 33.23 56.11  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.41 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0131) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

U.H. Tp(hrs)= 1.31

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	17.95	5.08	3.26
0.667	4.90	2.167	9.79	3.667	17.95	5.17	3.26
0.750	4.90	2.250	9.79	3.750	17.95	5.25	3.26
0.833	4.90	2.333	9.79	3.833	17.95	5.33	3.26
0.917	4.90	2.417	9.79	3.917	17.95	5.42	3.26
1.000	4.90	2.500	9.79	4.000	17.95	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.009 (i)  
 TIME TO PEAK (hrs)= 4.417  
 RUNOFF VOLUME (mm)= 26.488  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.325

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

-----  
 | CALIB |  
 | STANDHYD ( 6052) | Area (ha)= 15.50  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.23 5.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 321.46 40.00  
 Mannings n = 0.013 0.250

-----  
 ID1= 1 ( 6051): 0.40 0.009 4.42 26.49  
 + ID2= 2 ( 6052): 15.50 3.443 3.00 56.11  
 =====  
 ID = 3 ( 0131): 15.90 3.445 3.00 55.36

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 ( 0131): 15.90 3.445 3.00 55.36  
 + ID2= 2 ( 0139): 202.66 4.375 3.00 34.25  
 =====  
 ID = 3 ( 0132): 218.56 7.820 3.00 35.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0530) |  
 | IN= 2--> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 /0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 /0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)

0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<--- hydrograph --->						<-pipe / channel-->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL		
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)		
INFLOW : ID= 2 ( 0132)	218.56	7.82	3.00	35.79	0.74	0.72	
OUTFLOW: ID= 1 ( 0530)	218.56	6.10	3.08	35.77	0.66	0.68	

CALIB  
STANDHYD ( 5302)  
ID= 1 DT= 5.0 min

Area (ha)= 5.80  
Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	3.48		2.32
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	196.64		40.00
Mannings n	0.013		0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90

ADD HYD ( 0135)			
1 + 2 = 3	AREA	QPEAK	TPEAK
	(ha)	(cms)	(hrs)
ID1= 1 ( 0120):	274.04	11.310	3.08
+ ID2= 2 ( 0134):	224.36	6.813	3.00
ID = 3 ( 0135):	498.40	18.099	3.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

DATA FOR SECTION ( 40.0) ----->			
Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67

0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.58  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 3.48 (ii) 12.82 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.97 0.31 1.223 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 32.32 53.09  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.40 0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)			
1 + 2 = 3	AREA	QPEAK	TPEAK
	(ha)	(cms)	(hrs)
ID1= 1 ( 0530):	218.56	6.098	3.08
+ ID2= 2 ( 5302):	5.80	1.223	3.00
ID = 3 ( 0134):	224.36	6.813	3.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

<--- hydrograph ---> <-pipe / channel-->  
INFLOW : ID= 2 ( 0135) 498.40 18.10 3.00 39.83 2.05 0.89  
OUTFLOW: ID= 1 ( 0507) 498.40 14.62 3.25 39.81 1.88 0.85

CALIB  
NASHYD ( 5071)  
ID= 1 DT= 5.0 min

Area (ha)= 8.40 Curve Number (CN)= 74.0  
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.72

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms) = 0.187

PEAK FLOW (cms) = 0.200 (i)
TIME TO PEAK (hrs) = 4.917
RUNOFF VOLUME (mm) = 33.264
TOTAL RAINFALL (mm) = 81.600
RUNOFF COEFFICIENT = 0.408

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

CALIB STANDHYD ( 5072) Area (ha) = 40.50
ID= 1 DT= 5.0 min Total Imp(%) = 45.00 Dir. Conn.(%) = 30.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha) = 18.23 22.28
Dep. Storage (mm) = 6.00 8.00
Average Slope (%) = 1.00 1.00
Length (m) = 519.62 40.00
Mannings n = 0.013 0.250

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data with time in hours and rain in mm/hr.

Max. Eff. Inten. (mm/hr) = 127.30 98.85

over (min) 5.00 15.00
Storage Coeff. (min) = 6.23 (ii) 14.96 (iii)
Unit Hyd. Tpeak (min) = 5.00 15.00
Unit Hyd. peak (cms) = 0.19 0.88
\*TOTALS\*
PEAK FLOW (cms) = 3.97 3.34 6.746 (iii)
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 75.60 39.00 49.98
TOTAL RAINFALL (mm) = 81.60 81.60 81.60
RUNOFF COEFFICIENT = 0.93 0.48 0.61

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 74.0 Ia = Dep. 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 ( 0121)
1 + 2 = 3
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 5071): 8.40 0.200 4.92 33.26
+ ID2= 2 ( 5072): 40.50 6.746 3.00 49.98
ID = 3 ( 0121): 48.90 6.761 3.00 47.11

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 ( 0121): 48.90 6.761 3.00 47.11
+ ID2= 2 ( 0507): 498.40 14.622 3.25 39.81
ID = 3 ( 0122): 547.30 18.891 3.17 40.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

STORE HYD( 1505)
ID= 1 DT= 5.0min
AREA (ha) = 253.60
QPEAK (cms) = 0.78
TPEAK (hrs) = 15.58
VOLUME (mm) = 47.57

TIME FLOW | TIME FLOW | TIME FLOW | TIME FLOW | TIME FLOW

Large data table with 16 columns showing time and flow values for various scenarios.

Large data table with 16 columns showing time and flow values for various scenarios.









1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 13.05  
over (min) 10.00 30.00  
Storage Coeff. (min)= 8.12 (ii) 27.74 (ii)  
Unit Hyd. Tpeak (min)= 10.00 30.00  
Unit Hyd. peak (cms)= 0.13 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 1.25 0.41 1.404 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 7.74 14.05  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.19 0.35

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. 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 ( 0100)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5011):	80.20	0.550	3.92 6.08
+ ID2= 2 ( 5012):	37.32	1.404	3.00 14.05
ID = 3 ( 0100):	117.52	1.503	3.08 8.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
IN= 2--> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100

CALIB  
NASHYD ( 5691) Area (ha)= 2.30 Curve Number (CN)= 69.3  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.07

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.085 (i)  
TIME TO PEAK (hrs)= 3.000  
RUNOFF VOLUME (mm)= 6.525  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.163

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

CALIB  
NASHYD ( 5021) Area (ha)= 3.67 Curve Number (CN)= 68.8  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.43

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

29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

--- TRAVEL TIME TABLE ---

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.93	21.56
1.21	88.05	.150E+05	7.1	0.96	35.43
1.33	88.17	.233E+05	10.6	0.96	36.49
1.44	88.28	.346E+05	15.5	0.93	37.18
1.56	88.40	.484E+05	22.8	0.86	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

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

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0100)	117.52	1.50	3.08	8.61	0.70 0.74
OUTFLOW: ID= 1 ( 0502)	117.52	0.97	3.67	8.61	0.56 0.65

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.047 (i)  
TIME TO PEAK (hrs)= 3.417  
RUNOFF VOLUME (mm)= 6.981  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.174

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

CALIB  
STANDHYD ( 0575) Area (ha)= 0.78  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	0.51	0.27
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	72.11	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr



hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 12.91  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.54 (ii) 22.25 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.09 0.01 0.089 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 9.34 25.37  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.23 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.6 Ia = Dep. 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 ( 5082)  
ID= 1 DT= 5.0 min  
Area (ha)= 0.71  
Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.52 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00

Length (m)= 68.80 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.47  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.47 (ii) 21.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.08 0.00 0.080 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 7.86 24.59  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.20 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 0568)  
ID= 1 DT= 5.0 min  
Area (ha)= 0.53  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 59.44 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 6.03  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.26 (ii) 28.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.30 0.04

PEAK FLOW (cms)= 0.06 0.00 0.060 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 5.97 24.18  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.15 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0510)  
ID= 1 DT= 5.0 min  
Area (ha)= 0.76  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.59 0.17  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 71.18 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.38  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.52 (ii) 20.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.10 0.00 0.103 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.56 29.07  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.73

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5092)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.73  
 Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.88 0.85  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 107.39 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59  
 0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59  
 1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59  
 1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59  
 1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59  
 1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59  
 1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
 1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 4.82  
 over (min) = 5.00 35.00  
 Storage Coeff. (min)= 4.74 (ii) 33.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.22 0.03

PEAK FLOW (cms)= 0.43 0.03 0.438 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.50 3.00  
 RUNOFF VOLUME (mm)= 34.03 4.82 17.08  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.12 0.43

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 58.4 Ia = Dep. 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 ( 5282)  
 ID= 1 DT= 5.0 min

Area (ha)= 2.08  
 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.38  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 3.23 (ii) 21.14 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.27 0.05

PEAK FLOW (cms)= 0.15 0.02 0.158 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.56 22.92  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.57

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 0501)  
 ID= 1 DT= 5.0 min

Area (ha)= 6.23  
 Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.62 3.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 203.80 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38  
 0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38  
 0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38  
 0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38  
 0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38  
 0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59  
 0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59  
 0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59  
 0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59  
 0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59  
 1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59  
 1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59  
 1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59  
 1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59  
 1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
 1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.64  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 3.41 (ii) 21.22 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

PEAK FLOW (cms)= 0.23 0.02 0.237 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.72 26.22  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.65

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 0481)  
 ID= 1 + 2 = 3

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

ID1= 1 ( 0501):	6.23	0.438	3.00	17.08
+ ID2= 2 ( 0521):	3.67	0.047	3.42	6.98
ID = 3 ( 0481):	9.90	0.458	3.00	13.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	9.90	0.458	3.00	13.34
+ ID2= 2 ( 5082):	0.71	0.080	3.00	24.59
=====				
ID = 1 ( 0481):	10.61	0.538	3.00	14.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	10.61	0.538	3.00	14.09
+ ID2= 2 ( 5092):	1.73	0.158	3.00	22.92
=====				
ID = 3 ( 0481):	12.34	0.697	3.00	15.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	12.34	0.697	3.00	15.33
+ ID2= 2 ( 0510):	0.76	0.103	3.00	29.07
=====				
ID = 1 ( 0481):	13.10	0.800	3.00	16.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	13.10	0.800	3.00	16.13
+ ID2= 2 ( 5282):	2.08	0.237	3.00	26.22
=====				
ID = 3 ( 0481):	15.18	1.037	3.00	17.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	15.18	1.037	3.00	17.51
+ ID2= 2 ( 0568):	0.53	0.060	3.00	24.18
=====				
ID = 1 ( 0481):	15.71	1.097	3.00	17.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	15.71	1.097	3.00	17.74
+ ID2= 2 ( 0591):	2.30	0.085	3.00	6.53
=====				
ID = 3 ( 0481):	18.01	1.181	3.00	16.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	18.01	1.181	3.00	16.30
+ ID2= 2 ( 0575):	0.78	0.089	3.00	25.37
=====				
ID = 1 ( 0481):	18.79	1.270	3.00	16.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 0524)	Area (ha)=	7.22	Curve Number (CN)= 80.7
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.20	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38

0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 0.261 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 11.019  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.275

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

CALIB			
NASHYD ( 0522)	Area (ha)=	3.31	Curve Number (CN)= 63.1
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.16	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59

CALIB			
STANDHYD ( 0580)	Area (ha)=	1.87	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.22	0.65
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	111.65	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59

1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 6.03  
over (min) 5.00 35.00  
Storage Coeff. (min)= 3.31 (ii) 30.02 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.26 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 0.21 0.01 0.208 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 34.03 5.97 24.20  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.15 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0519) | Area (ha)= 2.08  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38

0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
over (min) 5.00 35.00  
Storage Coeff. (min)= 3.41 (ii) 30.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.26 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 0.23 0.01 0.230 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 34.03 5.67 24.10  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.14 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.40 0.40  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 109.54 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
over (min) 5.00 35.00  
Storage Coeff. (min)= 3.27 (ii) 30.57 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.27 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 0.24 0.00 0.239 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 34.03 5.67 27.78  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.14 0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0298) |  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0519): 2.08 0.230 3.00 24.10  
+ ID2= 2 ( 0529): 1.80 0.239 3.00 27.78

=====  
ID = 3 ( 0298): 3.88 0.469 3.00 25.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0298) |  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0298): 3.88 0.469 3.00 25.81  
+ ID2= 2 ( 0580): 1.87 0.208 3.00 24.20  
=====  
ID = 1 ( 0298): 5.75 0.677 3.00 25.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0296) |  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0298): 5.75 0.677 3.00 25.28  
+ ID2= 2 ( 0522): 3.31 0.066 3.08 5.65  
=====  
ID = 3 ( 0296): 9.06 0.740 3.00 18.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0523) | Area (ha)= 6.61  
ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.96 1.65  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 209.92 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38

0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 38.71  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.83 (ii) 17.53 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.22 0.06

PEAK FLOW (cms)= 0.54 0.10 0.609 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 34.03 11.75  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.29 0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0291)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0296):	9.06	0.740	3.00	18.11
+ ID2= 2 ( 0523):	6.61	0.609	3.00	22.89
=====				
ID = 3 ( 0291):	15.67	1.349	3.00	20.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |  
| STANDHYD ( 0525) | Area (ha)= 1.45  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.94	0.51
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	98.32	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 12.66  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.06 (ii) 22.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.27 0.05

PEAK FLOW (cms)= 0.16 0.01 0.164 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 9.18 25.32  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.23 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0304)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0291):	15.67	1.349	3.00	20.13
+ ID2= 2 ( 0525):	1.45	0.164	3.00	25.32
=====				
ID = 3 ( 0304):	17.12	1.514	3.00	20.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0295)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0304):	17.12	1.514	3.00	20.57
+ ID2= 2 ( 0524):	7.22	0.261	3.08	11.02
=====				
ID = 3 ( 0295):	24.34	1.738	3.00	17.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |  
| STANDHYD ( 0527) | Area (ha)= 1.68  
| ID= 1 DT= 5.0 min | Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.28	0.40
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	105.83	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38

0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 74.64  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.20 (ii) 12.97 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.15 0.05 0.188 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 34.03 18.71 26.67  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.47 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0301)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0295):	24.34	1.738	3.00	17.73
+ ID2= 2 ( 0527):	1.68	0.188	3.00	26.67
=====				
ID = 3 ( 0301):	26.02	1.927	3.00	18.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0520) Area (ha)= 2.27  
ID= 1 DT= 5.0 min Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.38 0.89  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 123.02 40.00  
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93 13.94  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 3.50 (ii) 22.62 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.26 0.05

PEAK FLOW (cms)= 0.23 0.02  
TIME TO PEAK (hrs)= 3.00 3.33  
RUNOFF VOLUME (mm)= 34.03 10.01  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.25

\*TOTALS\*  
0.242 (iii)  
3.00  
24.66  
40.03  
0.62

Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93 14.01  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 2.69 (ii) 21.76 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.13 0.00  
TIME TO PEAK (hrs)= 3.00 3.33  
RUNOFF VOLUME (mm)= 34.03 10.06  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.25

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR( 0310) | OVERFLOW IS OFF

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0305) |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0301):	26.02	1.927	3.00	18.31
+ ID2= 2 ( 0520):	2.27	0.242	3.00	24.66
ID = 3 ( 0305):	28.29	2.169	3.00	18.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| RESERVOIR( 0445) | OVERFLOW IS OFF

IN= 2	OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.1400	0.8343
			0.0195	0.2416	0.2360	1.0014
			0.0700	0.5564	0.3420	1.6616

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
INFLOW : ID= 2 ( 0305)	28.290	2.169	3.00	18.82
OUTFLOW: ID= 1 ( 0445)	28.290	0.057	6.08	18.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.62  
TIME SHIFT OF PEAK FLOW (min)=185.00  
MAXIMUM STORAGE USED (ha.m.)= 0.4739

CALIB  
STANDHYD ( 0526) Area (ha)= 0.94  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.73 0.21  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 79.16 40.00

| IN= 2---> OUT= 1 |

DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0476	0.0432
	0.0096	0.0220	0.0579	0.0480
	0.0206	0.0306	0.0671	0.0528
	0.0297	0.0360	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
INFLOW : ID= 2 ( 0526)	0.940	0.127	3.00	28.74
OUTFLOW: ID= 1 ( 0310)	0.940	0.008	4.08	28.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.64  
TIME SHIFT OF PEAK FLOW (min)= 65.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0193

CALIB  
STANDHYD ( 0574) Area (ha)= 1.44  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.12 0.32  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 97.98 40.00  
Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59

1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	8.93
over (min)	5.00	30.00
Storage Coeff. (min)=	3.06 (ii)	25.89 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.27	0.04
PEAK FLOW (cms)=	0.19	0.00
TIME TO PEAK (hrs)=	3.00	3.42
RUNOFF VOLUME (mm)=	34.03	7.71
TOTAL RAINFALL (mm)=	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.19

\*TOTALS\*  
0.192 (iii)  
3.00  
28.23  
40.03  
0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0307)  
IN= 2--> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.440	0.192	3.00	28.23
1.440	0.013	4.08	27.85

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.86  
TIME SHIFT OF PEAK FLOW (min)= 65.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0288

ADD HYD ( 0306)  
1 + 2 = 3

AREA QPEAK TPEAK R.V.

PEAK FLOW (cms)=	1.54	0.20
TIME TO PEAK (hrs)=	3.00	3.33
RUNOFF VOLUME (mm)=	34.03	9.53
TOTAL RAINFALL (mm)=	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.24

\*TOTALS\*  
1.636 (iii)  
3.00  
21.78  
40.03  
0.54

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.6 Ia = Dep. 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 ( 0572)  
ID= 1 DT= 5.0 min

Area (ha)= 11.31  
Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

IMPERVIOUS (ha)	PERVIOUS (i) (mm)
8.03	3.28
6.00	8.00
1.00	1.00
274.59	40.00
0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59

ID1= 1 ( 0307):	1.44	0.013	4.08	27.85
+ ID2= 2 ( 0310):	0.94	0.008	4.08	28.13
ID = 3 ( 0306):	2.38	0.022	4.08	27.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0571)  
ID= 1 DT= 5.0 min

Area (ha)= 19.59  
Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

IMPERVIOUS (ha)	PERVIOUS (i) (mm)
13.32	6.27
6.00	8.00
1.00	1.00
361.39	40.00
0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	20.90
over (min)	5.00	25.00
Storage Coeff. (min)=	6.69 (ii)	22.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.18	0.05

1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59
-------	------	-------	-------	-------	------	------	------

Max.Eff.Inten.(mm/hr)=	61.93	44.53
over (min)	5.00	20.00
Storage Coeff. (min)=	5.67 (ii)	17.68 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.20	0.06

PEAK FLOW (cms)=	0.91	0.23
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	34.03	15.32
TOTAL RAINFALL (mm)=	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.38

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0314)  
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
19.59	1.636	3.00	21.78	
11.31	1.061	3.00	24.67	
ID = 3 ( 0314):	30.90	2.697	3.00	22.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0573)  
ID= 1 DT= 5.0 min

Area (ha)= 2.66  
Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS (ha)	PERVIOUS (i) (mm)
1.60	1.06
6.00	8.00
1.00	1.00
133.17	40.00
0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 10.21  
over (min) 5.00 30.00  
Storage Coeff. (min)= 3.67 (ii) 25.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. Tpeak (cms)= 0.25 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 0.27 0.02 0.275 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 8.72 23.90  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.22 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.8 Ia = Dep. 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 ( 0317)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0314):	30.90	2.697	3.00	22.84
+ ID2= 2 ( 0573):	2.66	0.275	3.00	23.90

ID = 3 ( 0317): 33.56 2.972 3.00 22.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0446)	OVERFLOW IS OFF
IN= 2---> OUT= 1	
DT= 5.0 min	
OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000
0.0230	0.3704
0.0900	0.8066

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0317)	33.560	2.972	3.00	22.92
OUTFLOW: ID= 1 ( 0446)	33.560	0.073	6.08	22.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.44  
TIME SHIFT OF PEAK FLOW (min)=185.00  
MAXIMUM STORAGE USED (ha.m.)= 0.6937

ADD HYD ( 0102)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0306):	2.38	0.022	4.08	27.96
+ ID2= 2 ( 0445):	28.29	0.057	6.08	18.68
ID = 3 ( 0102):	30.67	0.076	6.00	19.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	30.67	0.076	6.00	19.40
+ ID2= 2 ( 0446):	33.56	0.073	6.08	22.43
ID = 1 ( 0102):	64.23	0.149	6.00	20.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0102):	64.23	0.149	6.00	20.99
+ ID2= 2 ( 0481):	18.79	1.270	3.00	16.68
ID = 3 ( 0102):	83.02	1.322	3.00	20.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	83.02	1.322	3.00	20.01
+ ID2= 2 ( 0502):	117.52	0.973	3.67	8.61
ID = 1 ( 0102):	200.54	1.812	3.00	13.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
IN= 2---> OUT= 1 Routing time step (min)= 5.00

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700 Main Channel
127.36	84.21	0.0700 Main Channel
128.86	84.21	0.0700 Main Channel
130.86	85.21	0.0700 / 0.0900 Main Channel
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

TRAVEL TIME TABLE  
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME

(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0102)	200.54	1.81	3.00	13.33	0.76
OUTFLOW: ID= 1 ( 0503)	200.54	1.44	3.08	13.33	0.68

CALIB  
NASHYD ( 5031) Area (ha)= 1.70 Curve Number (CN)= 71.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.82

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59



0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms) = 0.079

PEAK FLOW (cms) = 0.015 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 7.555  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.189

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

CALIB  
 STANDHYD ( 5032) | Area (ha) = 12.20  
 ID= 1 DT= 5.0 min | Total Imp(%) = 59.00 Dir. Conn.(%) = 47.00

Surface Area	(ha)	7.20	5.00
Dep. Storage	(mm)	6.00	8.00
Average Slope	(%)	1.00	1.00
Length	(m)	285.19	40.00
Mannings n		0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 | Routing time step (min) = 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr) = 61.93 18.26  
 over (min) = 5.00 25.00  
 Storage Coeff. (min) = 5.80 (ii) 22.96 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 25.00  
 Unit Hyd. peak (cms) = 0.20 0.05

PEAK FLOW (cms) = 0.92 0.14 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.33 0.987 (iii)  
 RUNOFF VOLUME (mm) = 34.03 10.04 21.31  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.53

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5031): 1.70 0.015 3.92 7.56  
 + ID2= 2 ( 5032): 12.20 0.987 3.00 21.31  
 ID = 3 ( 0103): 13.90 0.990 3.00 19.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0103): 13.90 0.990 3.00 19.63  
 + ID2= 2 ( 0503): 200.54 1.441 3.00 13.33  
 ID = 3 ( 0104): 214.44 2.345 3.00 13.74

2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<----- hydrograph -----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0104) 214.44 2.34 3.00 13.74 0.62 0.30  
 OUTFLOW: ID= 1 ( 0504) 214.44 1.59 3.50 13.73 0.59 0.28

CALIB  
 NASHYD ( 5041) | Area (ha) = 0.30 Curve Number (CN) = 68.0  
 ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.89

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.002 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 6.763  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.169

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

CALIB	
STANDHYD ( 5042)	Area (ha)= 7.40
ID= 1 DT= 5.0 min	Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00
IMPERVIOUS PERVIOUS (i)	
Surface Area (ha)=	4.88 2.52
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	222.11 40.00
Mannings n	= 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	18.03
over (min)	5.00	25.00
Storage Coeff. (min)	4.99 (ii)	22.24 (ii)
Unit Hyd. Tpeak (min)	5.00	25.00
Unit Hyd. peak (cms)	0.21	0.05
PEAK FLOW (cms)	0.65	0.07
TIME TO PEAK (hrs)	3.00	3.33
RUNOFF VOLUME (mm)	34.03	9.51
*TOTALS*		
PEAK FLOW (cms)	0.65	0.07
TIME TO PEAK (hrs)	3.00	3.33
RUNOFF VOLUME (mm)	34.03	9.51
PEAK FLOW (cms)	0.65	0.07
TIME TO PEAK (hrs)	3.00	3.33
RUNOFF VOLUME (mm)	34.03	9.51

0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)	= 0.076
PEAK FLOW (cms)	= 0.019 (i)
TIME TO PEAK (hrs)	= 4.083
RUNOFF VOLUME (mm)	= 9.508
TOTAL RAINFALL (mm)	= 40.032
RUNOFF COEFFICIENT	= 0.238

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

CALIB	
STANDHYD ( 5212)	Area (ha)= 13.80
ID= 1 DT= 5.0 min	Total Imp(%)= 52.00 Dir. Conn.(%)= 40.00
IMPERVIOUS PERVIOUS (i)	
Surface Area (ha)=	7.18 6.62
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	303.32 40.00
Mannings n	= 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38

TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT	= 0.85	0.24	0.57

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 68.0 Ia = Dep. 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 ( 0105)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5041):	0.30	0.002	4.00	6.76
+ ID2= 2 ( 5042):	7.40	0.688	3.00	22.75
=====				
ID = 3 ( 0105):	7.70	0.689	3.00	22.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0105):	7.70	0.689	3.00	22.12
+ ID2= 2 ( 0504):	214.44	1.588	3.50	13.73
=====				
ID = 3 ( 0106):	222.14	1.897	3.00	14.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
NASHYD ( 5211)	Area (ha)= 1.90 Curve Number (CN)= 77.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.95

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	1.59	1.583	3.97	3.167	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.250	8.73	4.67	2.38

Max.Eff.Inten.(mm/hr)=	61.93	21.47
over (min)	5.00	25.00
Storage Coeff. (min)	6.02 (ii)	22.10 (ii)
Unit Hyd. Tpeak (min)	5.00	25.00
Unit Hyd. peak (cms)	0.19	0.05
PEAK FLOW (cms)	0.88	0.22
TIME TO PEAK (hrs)	3.00	3.33
RUNOFF VOLUME (mm)	34.03	11.99
TOTAL RAINFALL (mm)	40.03	40.03
RUNOFF COEFFICIENT	= 0.85	0.30
*TOTALS*		
PEAK FLOW (cms)	0.88	0.22
TIME TO PEAK (hrs)	3.00	3.33
RUNOFF VOLUME (mm)	34.03	11.99
TOTAL RAINFALL (mm)	40.03	40.03
RUNOFF COEFFICIENT	= 0.85	0.30

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.019	4.08	9.51
+ ID2= 2 ( 5212):	13.80	0.988	3.00	20.81
=====				
ID = 3 ( 0112):	15.70	0.990	3.00	19.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):	222.14	1.897	3.00	14.03
+ ID2= 2 ( 0112):	15.70	0.990	3.00	19.44
-----				
ID = 3 ( 0114):	237.84	2.887	3.00	14.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88

PEAK FLOW (cms)= 0.012 (i)  
TIME TO PEAK (hrs)= 3.667  
RUNOFF VOLUME (mm)= 6.768  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.169

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

CALIB  
STANDHYD ( 5052) | Area (ha)= 14.60  
ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 9.64 4.96  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 311.98 40.00  
Mannings n = 0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 18.03  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 6.12 (ii) 23.37 (ii)

1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

hydrograph <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0114) 237.84 2.89 3.00 14.38 0.36 0.33  
OUTFLOW : ID= 1 ( 0505) 237.84 2.43 3.08 14.38 0.32 0.31

CALIB  
NASHYD ( 5051) | Area (ha)= 1.30 Curve Number (CN)= 68.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.62

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.080

Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.19 0.05  
\*TOTALS\*  
PEAK FLOW (cms)= 1.26 0.14 1.321 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 9.51 22.75  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.24 0.57

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 5051): 1.30 0.012 3.67 6.77  
+ ID2= 2 ( 5052): 14.60 1.321 3.00 22.75  
-----  
ID = 3 ( 0107): 15.90 1.324 3.00 21.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0107): 15.90 1.324 3.00 21.44  
+ ID2= 2 ( 0505): 237.84 2.429 3.08 14.38  
-----  
ID = 3 ( 0108): 253.74 3.462 3.00 14.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 304.1) -----

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900

45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

TRAVEL TIME TABLE					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<--- hydrograph --->						
<-pipe / channel->						
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0108)	253.74	3.46	3.00	14.82	1.12	1.06
OUTFLOW : ID= 1 ( 0506)	253.74	3.23	3.08	14.82	1.09	1.04

Average Slope	(%)=	1.00	1.00
Length	(m)=	228.04	40.00
Mannings n	=	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)=	61.93	19.79
over (min)	5.00	25.00
Storage Coeff. (min)=	5.07 (ii)	21.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.21	0.05

PEAK FLOW (cms)=	0.68	0.08	0.717 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	10.43	22.94
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.26	0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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					
NASHYD ( 5061)	Area (ha)=	3.90	Curve Number (CN)=	71.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res. (N)=	3.00	
	U.H. Tp (hrs)=	0.62			

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)=	0.042 (i)
TIME TO PEAK (hrs)=	3.667
RUNOFF VOLUME (mm)=	7.556
TOTAL RAINFALL (mm)=	40.032
RUNOFF COEFFICIENT =	0.189

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

CALIB					
STANDHYD ( 5062)	Area (ha)=	7.80	Dir. Conn. (%)=	53.00	
ID= 1 DT= 5.0 min	Total Imp (%)=	65.00			

Surface Area (ha)=	5.07	PERVIOUS (i)	2.73
Dep. Storage (mm)=	6.00	PERVIOUS (i)	8.00

ADD HYD ( 0109)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 5061):	3.90	0.042	3.67	7.56	
+ ID2= 2 ( 5062):	7.80	0.717	3.00	22.94	
ID = 3 ( 0109):	11.70	0.728	3.00	17.81	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)					
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0109):	11.70	0.728	3.00	17.81	
+ ID2= 2 ( 0506):	253.74	3.232	3.08	14.82	
ID = 3 ( 0110):	265.44	3.623	3.08	14.96	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD ( 5101)	Area (ha)=	0.80	Curve Number (CN)=	66.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res. (N)=	3.00	
	U.H. Tp (hrs)=	1.42			

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59

1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
 1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Unit Hyd Qpeak (cms) = 0.022

PEAK FLOW (cms) = 0.004 (i)  
 TIME TO PEAK (hrs) = 4.750  
 RUNOFF VOLUME (mm) = 6.296  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.157

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

CALIB  
 STANDHYD ( 5102 ) Area (ha) = 0.90  
 ID= 1 DT= 5.0 min Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.45 0.45  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 77.46 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.40  
 over (min) = 5.00 25.00  
 Storage Coeff. (min) = 2.65 (ii) 21.02 (iii)  
 Unit Hyd. Tpeak (min) = 5.00 25.00  
 Unit Hyd. peak (cms) = 0.29 0.05

PEAK FLOW (cms) = 0.05 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.33 0.059 (iii)  
 RUNOFF VOLUME (mm) = 34.03 8.53 3.00  
 TOTAL RAINFALL (mm) = 40.03 40.03 17.44  
 RUNOFF COEFFICIENT = 0.85 0.21 40.03 0.44

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115 )  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5101 ): 0.80 0.004 4.75 6.30  
 + ID2= 2 ( 5102 ): 0.90 0.059 3.00 17.44  
 ID = 3 ( 0115 ): 1.70 0.059 3.00 12.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0511 )  
 IN= 2 ---> OUT= 1 Routing time step (min) = 5.00

<----- DATA FOR SECTION ( 553.6 ) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
80.89	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	

199.00 81.23 0.1100

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<----- hydrograph -----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0115 ) 1.70 0.06 3.00 12.20 0.01 0.24  
 OUTFLOW : ID= 1 ( 0511 ) 1.70 0.04 3.00 12.20 0.01 0.24

CALIB  
 NASHYD ( 5111 ) Area (ha) = 1.90 Curve Number (CN) = 67.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
 U.H. Tp (hrs) = 0.56

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38

0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38  
 0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38  
 0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59  
 0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59  
 0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59  
 0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59  
 0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59  
 1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59  
 1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59  
 1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59  
 1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59  
 1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
 1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Unit Hyd Qpeak (cms) = 0.129

PEAK FLOW (cms) = 0.019 (i)  
 TIME TO PEAK (hrs) = 3.583  
 RUNOFF VOLUME (mm) = 6.529  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.163

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

CALIB  
 STANDHYD ( 5112 ) Area (ha) = 1.10  
 ID= 1 DT= 5.0 min Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.55 0.55  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 85.63 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38

0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93 18.48  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.82 (ii) 19.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.07 0.02 0.076 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.10 18.46  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.46

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0116)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5111):	1.90	0.019	3.58	6.53
+ ID2= 2 ( 5112):	1.10	0.076	3.00	18.46
-----				
ID = 3 ( 0116):	3.00	0.082	3.00	10.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

INFLOW: ID= 2 ( 0117)	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
OUTFLOW: ID= 1 ( 0512)	4.70	0.12	3.00	11.37	0.37	0.28
	4.70	0.06	3.42	11.37	0.28	0.23

CALIB				
NASHYD ( 5121)				
ID= 1 DT= 5.0 min	Area (ha)=	0.70	Curve Number (CN)=	71.0
	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	1.14		

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

----- TRANSFORMED HYETOGRAPH -----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38	0.167	1.59	1.667	3.97
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38	0.250	1.59	1.750	3.97
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38	0.417	1.59	1.917	3.97
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38	0.583	2.38	2.083	4.76
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59	0.750	2.38	2.250	4.76
0.833	2.38	2.250	4.76	3.750	3.97	5.25	1.59	0.917	2.38	2.417	4.76
1.000	2.38	2.333	4.76	3.833	3.97	5.33	1.59	1.083	2.38	2.583	23.82
1.083	2.38	2.417	4.76	3.917	3.97	5.42	1.59	1.167	2.38	2.667	23.82
1.250	2.38	2.500	4.76	4.000	3.97	5.50	1.59	1.250	2.38	2.750	42.88
1.333	2.38	2.583	23.82	4.083	3.18	5.58	1.59	1.417	2.38	2.833	42.88
1.417	2.38	2.667	23.82	4.167	3.18	5.67	1.59	1.500	2.38	2.917	61.93
1.500	2.38	2.750	42.88	4.250	3.18	5.75	1.59				
		1.333	2.38	2.833	3.18	5.83	1.59				
		1.417	2.38	2.917	3.18	5.92	1.59				
		1.500	2.38	3.000	3.18	6.00	1.59				

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 4.333  
 RUNOFF VOLUME (mm)= 7.553  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.189

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

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0116):	3.00	0.082	3.00	10.90
+ ID2= 2 ( 0511):	1.70	0.043	3.00	12.20
-----				
ID = 3 ( 0117):	4.70	0.125	3.00	11.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2---> OUT= 1 | Routing time step (min)= 5.00

----- DATA FOR SECTION ( 484.2) -----				
Distance	Elevation	Manning		
0.00	80.80	0.0900		
9.73	80.46	0.0900		
14.10	82.04	0.0900		
17.18	82.28	0.0900		
41.13	82.12	0.0900 / 0.0700	Main Channel	
46.88	79.71	0.0700	Main Channel	
51.41	80.90	0.0700 / 0.0900	Main Channel	
94.29	80.56	0.0900		
175.64	80.72	0.0900		
192.09	80.85	0.0900		

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

----- hydrograph ----- <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

CALIB			
STANDHYD ( 5122)			
ID= 1 DT= 5.0 min	Area (ha)=	3.20	
	Total Imp(%)=	60.00	Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.92	1.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	146.06	40.00
Mannings n =	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38	0.167	1.59	1.667	3.97
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38	0.333	1.59	1.833	3.97
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38	0.500	1.59	2.000	3.97
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59	0.667	2.38	2.167	4.76
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59	0.917	2.38	2.417	4.76
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59	1.083	2.38	2.583	23.82
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59	1.250	2.38	2.750	42.88
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59	1.417	2.38	2.917	61.93
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59	1.500	2.38	3.000	61.93

Max. Eff. Inten. (mm/hr)= 61.93 19.24  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.88 (ii) 20.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.25 0.04 0.271 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.29 21.44  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5121):	0.70	0.005	4.33	7.55
+ ID2= 2 ( 5122):	3.20	0.271	3.00	21.44
-----				
ID = 3 ( 0118):	3.90	0.272	3.00	18.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):	3.90	0.272	3.00	18.95
+ ID2= 2 ( 0512):	4.70	0.060	3.42	11.37
-----				
ID = 3 ( 0119):	8.60	0.317	3.00	14.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0110):	265.44	3.623	3.08	14.96
+ ID2= 2 ( 0119):	8.60	0.317	3.42	14.81
-----				
ID = 3 ( 0120):	274.04	3.857	3.00	14.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6011)	Area (ha)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	44.10	62.0	3.00
	Ia (mm)= 8.00		
	U.H. Tp(hrs)= 0.83		

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.275 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

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

CALIB		
STANDHYD ( 6012)	Area (ha)	Dir. Conn.(%)
ID= 1 DT= 5.0 min	11.00	16.00
	Total Imp(%)= 28.00	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)	Impervious	Pervious
Dep. Storage (mm)	3.08	7.92
Average Slope (%)	6.00	8.00
Length (m)	1.00	1.00
Mannings n	270.80	40.00
	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.91  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 5.63 (ii) 28.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.20 0.04

\*TOTALS\*  
 PEAK FLOW (cms)= 0.28 0.11 0.323 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 6.61 10.99  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.27

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6011):	44.10	0.275	3.92	5.47

+ ID2= 2 ( 6012):	11.00	0.323	3.00	10.99
-----				
ID = 3 ( 0124):	55.10	0.372	3.75	6.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6021)	Area (ha)	Curve Number (CN)	# of Linear Res. (N)
ID= 1 DT= 5.0 min	43.60	62.0	3.00
	Ia (mm)= 8.00		
	U.H. Tp(hrs)= 0.95		

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.247 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

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

CALIB	
-------	--

STANDHYD ( 6022) | Area (ha)= 12.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93 9.23  
 over (min) = 5.00 30.00  
 Storage Coeff. (min)= 5.90 (ii) 28.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.19 0.04

\*TOTALS\*  
 PEAK FLOW (cms)= 0.48 0.12 0.519 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 6.72 13.00  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.32

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. Storage (Above)

199.59 90.31 0.1400  
 212.02 90.96 0.1400  
 225.58 91.35 0.1400  
 252.71 91.66 0.1400  
 274.11 91.86 0.1400

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0126)	111.60	0.92	3.00	6.88	0.52	0.20
OUTFLOW : ID= 1 ( 0603)	111.60	0.52	4.83	6.88	0.48	0.20

CALIB |  
 NASHYD ( 6031) | Area (ha)= 19.00 Curve Number (CN)= 72.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.32

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38

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

ADD HYD ( 0125) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6021): 43.60 0.247 4.08 5.47  
 + ID2= 2 ( 6022): 12.90 0.519 3.00 13.00  
 ID = 3 ( 0125): 56.50 0.549 3.00 7.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0124): 55.10 0.372 3.75 6.57  
 + ID2= 2 ( 0125): 56.50 0.549 3.00 7.19  
 ID = 3 ( 0126): 111.60 0.915 3.00 6.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603) | Routing time step (min)'= 5.00  
 IN= 2----> OUT= 1 |

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400

0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.123 (i)  
 TIME TO PEAK (hrs)= 4.583  
 RUNOFF VOLUME (mm)= 7.844  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.196

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

CALIB |  
 STANDHYD ( 6032) | Area (ha)= 10.73  
 ID= 1 DT= 5.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.00 7.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 267.46 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38



0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.59  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 5.58 (ii) 23.86 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.20 0.05

PEAK FLOW (cms)= 0.26 0.18  
TIME TO PEAK (hrs)= 3.00 3.33  
RUNOFF VOLUME (mm)= 34.03 9.46  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.24

\*TOTALS\*  
0.343 (iii)  
3.00  
13.14  
40.03  
0.33

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0127)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6031):	19.00	0.123	4.58	7.84
+ ID2= 2 ( 6032):	10.73	0.343	3.00	13.14
ID = 3 ( 0127):	29.73	0.351	3.00	9.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6131)	Area (ha)=	1.77	Curve Number (CN)= 66.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.22	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.032 (i)  
TIME TO PEAK (hrs)= 3.083  
RUNOFF VOLUME (mm)= 6.291  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.157

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

CALIB			
STANDHYD ( 6222)	Area (ha)=	2.02	
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.58 0.44

Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 116.05 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.35  
over (min) = 5.00 30.00  
Storage Coeff. (min)= 3.38 (ii) 26.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.26 0.04

PEAK FLOW (cms)= 0.27 0.01  
TIME TO PEAK (hrs)= 3.00 3.42  
RUNOFF VOLUME (mm)= 34.03 7.24  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.18

\*TOTALS\*  
0.268 (iii)  
3.00  
28.13  
40.03  
0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 6142)	Area (ha)=	1.50	
ID= 1 DT= 5.0 min	Total Imp(%)=	69.00	Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.04 0.47  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 100.00 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 21.90  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 3.09 (ii) 19.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

PEAK FLOW (cms)= 0.13 0.02  
TIME TO PEAK (hrs)= 3.00 3.25  
RUNOFF VOLUME (mm)= 34.03 9.66  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.24

\*TOTALS\*  
0.138 (iii)  
3.00  
21.84  
40.03  
0.55

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6152) | Area (ha)= 2.14  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.67 0.47  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 119.44 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.35  
 over (min) = 5.00 30.00  
 Storage Coeff. (min)= 3.44 (ii) 26.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00

Unit Hyd. peak (cms)= 0.26 0.04  
 PEAK FLOW (cms)= 0.28 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.42 0.284 (iii)  
 RUNOFF VOLUME (mm)= 34.03 7.24 3.00  
 TOTAL RAINFALL (mm)= 40.03 40.03 28.13  
 RUNOFF COEFFICIENT = 0.85 0.18 40.03 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 6182) | Area (ha)= 1.49  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.16 0.33  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 99.67 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 11.27  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.62 (ii) 6.12 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.15

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 11.27  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.62 (ii) 6.12 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.15

PEAK FLOW (cms)= 0.14 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.139 (iii)  
 RUNOFF VOLUME (mm)= 34.03 5.67 32.33  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.14 40.03 0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6172) | Area (ha)= 2.31  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 49.00  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.09 (ii) 14.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.13 0.03 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 0.149 (iii)  
 RUNOFF VOLUME (mm)= 34.03 13.07 23.54  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.33 0.59

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.81 0.05  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.72 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 70.42  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.52 (ii) 13.52 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.19 0.06 0.241 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 34.03 15.68 24.85  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.39 0.62

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0342)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6142):	1.50	0.138	3.00	21.84
+ ID2= 2 ( 6152):	2.14	0.284	3.00	28.13
=====				
ID = 3 ( 0342):	3.64	0.423	3.00	25.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0342):	3.64	0.423	3.00	25.54
+ ID2= 2 ( 6172):	2.31	0.241	3.00	24.85
=====				
ID = 1 ( 0342):	5.95	0.663	3.00	25.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0342):	5.95	0.663	3.00	25.27
+ ID2= 2 ( 6182):	1.49	0.149	3.00	23.54
=====				
ID = 3 ( 0342):	7.44	0.813	3.00	24.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0342):	7.44	0.813	3.00	24.93
+ ID2= 2 ( 6222):	2.02	0.268	3.00	28.13
=====				
ID = 1 ( 0342):	9.46	1.081	3.00	25.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0342):	9.46	1.081	3.00	25.61
+ ID2= 2 ( 6302):	0.86	0.139	3.00	32.33
=====				
ID = 3 ( 0342):	10.32	1.220	3.00	26.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 6212)			
ID= 1 DT= 5.0 min			
Area (ha)=	1.15		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.75	0.40
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	87.56	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
over (min) 5.00 35.00  
Storage Coeff. (min)= 2.86 (ii) 30.16 (ii)  
Unit Hyd. Tpeak (min)= 5.00 35.00  
Unit Hyd. peak (cms)= 0.28 0.04

\*TOTALS\*  
PEAK FLOW (cms)= 0.13 0.00 0.128 (iii)  
TIME TO PEAK (hrs)= 3.00 3.50 3.00  
RUNOFF VOLUME (mm)= 34.03 5.67 24.09  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.14 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6232)			
ID= 1 DT= 5.0 min			
Area (ha)=	0.85		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.55	0.30
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	75.28	40.00
Mannings n =	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
over (min) 5.00 30.00  
Storage Coeff. (min)= 2.61 (ii) 29.91 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00

Unit Hyd. peak (cms)= 0.29 0.04

PEAK FLOW (cms)= 0.09 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.42 0.095 (iii)  
 RUNOFF VOLUME (mm)= 34.03 5.67 24.00  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.14 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0488)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6212):	1.15	0.128	3.00	24.09
+ ID2= 2 ( 6232):	0.85	0.095	3.00	24.08
ID = 3 ( 0488):	2.00	0.224	3.00	24.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6262)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.96  
 Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.58 0.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 80.00 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38

0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38  
 0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38  
 0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38  
 0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59  
 0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59  
 0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59  
 0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59  
 0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59  
 1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59  
 1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59  
 1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59  
 1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59  
 1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
 1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.36  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.71 (ii) 21.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.10 0.01 0.102 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.28 24.52  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0342):	10.32	1.220	3.00	26.17
+ ID2= 2 ( 0488):	2.00	0.224	3.00	24.09
ID = 3 ( 0346):	12.32	1.444	3.00	25.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Length (m)= 91.65 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83 3.38	
0.417	1.59	1.917	3.97	3.417	8.73	4.92 3.38	
0.500	1.59	2.000	3.97	3.500	8.73	5.00 3.38	
0.583	2.38	2.083	4.76	3.583	3.97	5.08 1.59	
0.667	2.38	2.167	4.76	3.667	3.97	5.17 1.59	
0.750	2.38	2.250	4.76	3.750	3.97	5.25 1.59	
0.833	2.38	2.333	4.76	3.833	3.97	5.33 1.59	
0.917	2.38	2.417	4.76	3.917	3.97	5.42 1.59	
1.000	2.38	2.500	4.76	4.000	3.97	5.50 1.59	
1.083	2.38	2.583 23.82		4.083 3.18		5.58 1.59	
1.167	2.38	2.667 23.82		4.167 3.18		5.67 1.59	
1.250	2.38	2.750 42.88		4.250 3.18		5.75 1.59	
1.333	2.38	2.833 42.88		4.333 3.18		5.83 1.59	
1.417	2.38	2.917 61.93		4.417 3.18		5.92 1.59	
1.500	2.38	3.000 61.93		4.500 3.18		6.00 1.59	

Max.Eff.Inten.(mm/hr)= 61.93 11.27  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.94 (ii) 6.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.28 0.14

PEAK FLOW (cms)= 0.20 0.00 0.203 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 34.03 5.67 32.33  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.14 0.81

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0346):	12.32	1.444	3.00	25.83
+ ID2= 2 ( 6131):	1.77	0.032	3.08	6.29
ID = 1 ( 0346):	14.09	1.469	3.00	23.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0346):	14.09	1.469	3.00	23.38
+ ID2= 2 ( 6262):	0.96	0.102	3.00	24.52
ID = 3 ( 0346):	15.05	1.572	3.00	23.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0447) OVERFLOW IS OFF  
 IN= 2 --> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1070	0.3146
0.0150	0.1715	0.7100	0.8031

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

INFLOW : ID= 2 ( 0346) 15.050 1.572 3.00 23.45  
 OUTFLOW: ID= 1 ( 0447) 15.050 0.083 5.08 23.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.28  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.2775

CALIB  
 STANDHYD ( 6202)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.26  
 Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.18 0.08  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

RESERVOIR( 0491)  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0580	0.0848
0.0090	0.0366	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 6202)	1.260	0.203	3.00	32.33
OUTFLOW: ID= 1 ( 0491)	1.260	0.008	5.08	31.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.95  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0327

CALIB  
 STANDHYD ( 6062)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.98  
 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS (ha)	PERVIOUS (ha)
Surface Area	1.29	0.69
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	114.89	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59

0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93  
 over (min)= 5.00  
 Storage Coeff. (min)= 3.46 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.26

PEAK FLOW (cms)= 0.35  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 34.03  
 TOTAL RAINFALL (mm)= 40.03  
 RUNOFF COEFFICIENT = 0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 1000)  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 6122)	2.180	0.349	3.00	32.33
OUTFLOW: ID= 1 ( 1000)	2.180	0.014	5.08	31.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.07  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0564

1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93  
 over (min)= 5.00  
 Storage Coeff. (min)= 3.36 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.26

PEAK FLOW (cms)= 0.22  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 34.03  
 TOTAL RAINFALL (mm)= 40.03  
 RUNOFF COEFFICIENT = 0.85

\*TOTALS\*  
 over (min)= 5.00  
 Storage Coeff. (min)= 30.67 (ii)  
 Unit Hyd. Tpeak (min)= 35.00  
 Unit Hyd. peak (cms)= 0.04  
 over (min)= 3.00  
 over (min)= 5.67  
 over (min)= 40.03  
 over (min)= 0.60

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6122)  
 ID= 1 DT= 5.0 min

Area (ha)= 2.18  
 Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS (ha)	PERVIOUS (ha)
Surface Area	2.05	0.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	120.55	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59

ADD HYD ( 0493)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1000)	2.18	0.014	5.08	31.87
+ ID2= 2 ( 0491)	1.26	0.008	5.08	31.51
=====				
ID = 3 ( 0493)	3.44	0.022	5.08	31.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0493)	3.44	0.022	5.08	31.74
+ ID2= 2 ( 0493)	1.98	0.220	3.00	24.10
=====				
ID = 1 ( 0493)	5.42	0.235	3.00	28.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0319)  
 IN= 2----> OUT= 1

Routing time step (min)= 5.00

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37

0.54	90.13	.324E+04	4.0	1.14	13.36						
0.68	90.27	.581E+04	7.3	1.15	13.32						
0.81	90.40	.945E+04	11.9	1.15	13.29						
0.94	90.53	.142E+05	18.0	1.17	13.10						
1.08	90.67	.200E+05	26.0	1.19	12.79						
1.21	90.80	.268E+05	36.0	1.23	12.42						
1.34	90.93	.348E+05	48.2	1.27	12.03						
1.48	91.07	.464E+05	58.3	1.15	13.27						
1.61	91.20	.629E+05	78.8	1.15	13.30						
1.74	91.33	.819E+05	104.3	1.17	13.08						
1.88	91.47	.103E+06	135.3	1.20	12.74						
2.01	91.60	.128E+06	172.1	1.24	12.35						
2.14	91.73	.154E+06	215.1	1.28	11.94						
2.28	91.87	.183E+06	264.7	1.32	11.54						
2.41	92.00	.215E+06	321.3	1.37	11.15						

		<---- hydrograph ---->				<-pipe / channel-->					
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL					
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)					
INFLOW: ID= 2 ( 0493)	5.42	0.23	3.00	28.95	0.14	0.53					
OUTFLOW: ID= 1 ( 0319)	5.42	0.10	3.08	28.94	0.10	0.46					

CALIB		Area (ha)= 0.44		Dir. Conn.(%)= 78.00	
STANDHYD ( 6162)		Total Imp(%)= 78.00			
ID= 1 DT= 5.0 min					

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.10	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	54.16	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59

0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	14.36	
over (min)	5.00	25.00	
Storage Coeff. (min)=	2.14 (ii)	21.03 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.31	0.05	

PEAK FLOW (cms)=	0.06	0.00	0.060 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	10.28	28.78
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.26	0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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)= 2.49		Dir. Conn.(%)= 50.00	
STANDHYD ( 6102)		Total Imp(%)= 78.00			
ID= 1 DT= 5.0 min					

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.94	0.55	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	128.84	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59

Length (m)=	77.03	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	14.36	
over (min)	5.00	25.00	
Storage Coeff. (min)=	2.65 (ii)	21.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.29	0.05	

PEAK FLOW (cms)=	0.12	0.00	0.121 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	10.28	28.79
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.26	0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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)= 0.89		Dir. Conn.(%)= 78.00	
STANDHYD ( 6242)		Total Imp(%)= 78.00			
ID= 1 DT= 5.0 min					

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.69	0.20	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	

ADD HYD ( 0489)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6102):	2.49	0.279	3.00	27.17
+ ID2= 2 ( 6162):	0.44	0.060	3.00	28.78
=====				
ID = 3 ( 0489):	2.93	0.339	3.00	27.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0489):	2.93	0.339	3.00	27.41
+ ID2= 2 ( 6242):	0.89	0.121	3.00	28.79
=====				
ID = 1 ( 0489):	3.82	0.459	3.00	27.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0490)				
OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.1760	0.2330
	0.0280	0.0927	0.0000	0.0000
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0489)	3.820	0.459	3.00	27.73
OUTFLOW: ID= 1 ( 0490)	3.820	0.025	5.08	27.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.35  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0814

CALIB				
STANDHYD ( 6192)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	1.64	
	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
	IMPERVIOUS	PERVIOUS (i)		
	(ha)=	1.07	0.57	
	(mm)=	6.00	8.00	
	(%)=	1.00	1.00	

ADD HYD ( 0318)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0319):	5.42	0.103	3.08	28.94
+ ID2= 2 ( 0447):	15.05	0.083	5.08	23.26
=====				
ID = 3 ( 0318):	20.47	0.144	3.50	24.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0318):	20.47	0.144	3.50	24.76
+ ID2= 2 ( 0490):	3.82	0.025	5.08	27.51
=====				
ID = 1 ( 0318):	24.29	0.167	3.58	25.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0318):	24.29	0.167	3.58	25.19
+ ID2= 2 ( 6192):	1.64	0.188	3.00	26.39
=====				
ID = 3 ( 0318):	25.93	0.313	3.00	25.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0127):	29.73	0.351	3.00	9.76
+ ID2= 2 ( 0318):	25.93	0.313	3.00	25.27
=====				
ID = 3 ( 0128):	55.66	0.665	3.00	16.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)

Length (m)= 104.56 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38		
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38		
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38		
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38		
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38		
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38		
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59		
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59		
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59		
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59		
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59		
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59		
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59		
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59		
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59		
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59		
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59		
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59		

Max.Eff.Inten.(mm/hr)= 61.93 17.42  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 3.18 (ii) 20.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.27 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.18 0.02 0.188 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 12.21 26.39  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.30 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0128):	55.66	0.665	3.00	16.98
+ ID2= 2 ( 0603):	111.60	0.522	4.83	6.88
=====				
ID = 1 ( 0128):	167.26	0.863	4.50	10.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->					
Distance	Elevation	Manning			
0.00	86.75	0.0900			
3.09	87.40	0.0900			
18.33	87.41	0.0900			
35.33	86.99	0.0900			
73.84	86.75	0.0900			
103.33	86.41	0.0900			
120.33	86.11	0.0900			
129.46	86.13	0.0900			
143.37	85.32	0.0900			
154.33	85.02	0.0900			
161.57	85.09	0.0900			
163.05	84.78	0.0900 / 0.0700	Main Channel		
166.55	83.78	0.0700	Main Channel		
168.05	84.78	0.0700 / 0.1100	Main Channel		
172.02	85.29	0.1100			
191.39	86.19	0.1100			
270.18	85.78	0.1100			
296.33	86.36	0.1100			
324.34	86.68	0.1100			
368.56	87.05	0.1100			

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68

2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

Unit Hyd Qpeak (cms)= 0.016  
 PEAK FLOW (cms)= 0.006 (i)  
 TIME TO PEAK (hrs)= 7.750  
 RUNOFF VOLUME (mm)= 10.301  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.257

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

<--- hydrograph --->						<-pipe / channel->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL		
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)		
INFLOW: ID= 2 ( 0128)	167.26	0.86	4.50	10.24	1.50	0.09	
OUTFLOW: ID= 1 ( 0604)	167.26	0.65	6.17	10.23	1.55	0.09	

CALIB							
NASHYD ( 6041)	Area (ha)=	22.30					
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	53.00			

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	14.49		7.81
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	385.57		40.00
Mannings n	0.013		0.250

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

CALIB					
NASHYD ( 6041)	Area (ha)=	1.70	Curve Number (CN)=	79.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	4.12			

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93  
 over (min) 5.00 31.30 25.00

Storage Coeff. (min)= 6.95 (ii) 20.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.17 0.05  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.84 0.33 2.010 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 13.76 24.51  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.34 0.61

9.24	82.49	0.1100		
50.67	82.10	0.1100		
105.12	82.17	0.1100		
119.34	81.56	0.1100		
150.67	81.66	0.1100		
157.23	82.37	0.1100		
190.03	82.57	0.1100		
223.75	82.27	0.1100		
252.32	82.50	0.1100		
254.65	81.95	0.1100 /0.0700	Main Channel	
258.15	80.95	0.0700	Main Channel	
259.65	81.95	0.0700 /0.1100	Main Channel	
263.15	82.90	0.1100		
278.14	82.80	0.1100		
282.35	81.68	0.1100		
285.02	82.19	0.1100		
336.56	82.53	0.1100		
404.40	82.68	0.1100		

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 06041):	1.70	0.006	7.75	10.30
+ ID2= 2 ( 06042):	22.30	2.010	3.00	24.51
ID = 3 ( 0129):	24.00	2.010	3.00	23.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0129):	24.00	2.010	3.00	23.50
+ ID2= 2 ( 0604):	167.26	0.654	6.17	10.23
ID = 3 ( 0130):	191.26	2.237	3.00	11.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)		Routing time step (min)=	5.00
IN= 2---> OUT= 1			

<----- DATA FOR SECTION ( 801.4) ----->			
Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	

TRAVEL TIME TABLE					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<--- hydrograph --->							<-pipe / channel->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL			
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)			
INFLOW: ID= 2 ( 0130)	191.26	2.24	3.00	11.90	0.84	0.27		
OUTFLOW: ID= 1 ( 0605)	191.26	0.91	3.67	11.90	0.72	0.27		



CALIB  
 NASHYD ( 6111) Area (ha)= 0.60 Curve Number (CN)= 77.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.08

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 9.505  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.237

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

CALIB  
 STANDHYD ( 6112) Area (ha)= 10.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 62.00 Dir. Conn.(%)= 50.00

Surface Area (ha)= IMPERVIOUS 6.70 PERVIOUS (i) 4.10

Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 268.33 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 25.81  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 5.59 (ii) 20.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.20 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.87 0.14 0.943 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.73 22.88  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.57

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0137)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6111):	0.60	0.005	4.25	9.51
+ ID2= 2 ( 6112):	10.80	0.943	3.00	22.88
=====				
ID = 3 ( 0137):	11.40	0.944	3.00	22.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0137):	11.40	0.944	3.00	22.17
+ ID2= 2 ( 0605):	191.26	0.911	3.67	11.90
=====				
ID = 3 ( 0139):	202.66	1.617	3.00	12.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6051) Area (ha)= 0.40 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.31

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59

1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 4.583  
 RUNOFF VOLUME (mm)= 6.292  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.157

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

CALIB  
 STANDHYD ( 6052) Area (ha)= 15.50  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

Surface Area (ha)= IMPERVIOUS 10.23 PERVIOUS (i) 5.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 321.46 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59

1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.78  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.24 (ii) 23.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 1.33 0.13 1.392 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 8.90 22.47  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.22 0.56

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0131)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0051): 0.40 0.002 4.58 6.29  
 + ID2= 2 ( 0052): 15.50 1.392 3.00 22.47  
 ID = 3 ( 0131): 15.90 1.392 3.00 22.06

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 ( 0131): 15.90 1.392 3.00 22.06  
 + ID2= 2 ( 0139): 202.66 1.617 3.00 12.48  
 ID = 3 ( 0132): 218.56 3.009 3.00 13.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

INFLOW : ID= 2 ( 0132) 218.56 3.01 3.00 13.17 0.48 0.54  
 OUTFLOW: ID= 1 ( 0530) 218.56 2.13 3.00 13.17 0.43 0.50

CALIB  
 STANDHYD ( 5302)  
 ID= 1 DT= 5.0 min | Area (ha)= 5.80  
 Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.48 2.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH

TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73
0.167	1.59	1.667	3.97	3.167	8.73
0.250	1.59	1.750	3.97	3.250	8.73
0.333	1.59	1.833	3.97	3.333	8.73
0.417	1.59	1.917	3.97	3.417	8.73
0.500	1.59	2.000	3.97	3.500	8.73
0.583	2.38	2.083	4.76	3.583	3.97
0.667	2.38	2.167	4.76	3.667	3.97
0.750	2.38	2.250	4.76	3.750	3.97
0.833	2.38	2.333	4.76	3.833	3.97
0.917	2.38	2.417	4.76	3.917	3.97
1.000	2.38	2.500	4.76	4.000	3.97
1.083	2.38	2.583	23.82	4.083	3.18
1.167	2.38	2.667	23.82	4.167	3.18
1.250	2.38	2.750	42.88	4.250	3.18
1.333	2.38	2.833	42.88	4.333	3.18
1.417	2.38	2.917	61.93	4.417	3.18
1.500	2.38	3.000	61.93	4.500	3.18

Max.Eff.Inten.(mm/hr)= 61.93 15.40  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 4.64 (ii) 23.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.22 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.46 0.05 0.485 (iii)

DATA FOR SECTION ( 350.0)

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 / 0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

hydrograph  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)

TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 8.53 20.77  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.21 0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0530): 218.56 2.132 3.08 13.17  
 + ID2= 2 ( 5302): 5.80 0.485 3.00 20.77  
 ID = 3 ( 0134): 224.36 2.370 3.08 13.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0120): 274.04 3.857 3.00 14.95  
 + ID2= 2 ( 0134): 224.36 2.370 3.08 13.37  
 ID = 3 ( 0135): 498.40 6.173 3.08 14.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

DATA FOR SECTION ( 40.0)

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900











0.17	3.68	1.67	9.19	3.17	20.22	4.67	5.51
0.33	3.68	1.83	9.19	3.33	20.22	4.83	5.51
0.50	5.51	2.00	11.03	3.50	9.19	5.00	3.68
0.67	5.51	2.17	11.03	3.67	9.19	5.17	3.68
0.83	5.51	2.33	11.03	3.83	9.19	5.33	3.68
1.00	5.51	2.50	55.14	4.00	7.35	5.50	3.68
1.17	5.51	2.67	99.25	4.17	7.35	5.67	3.68
1.33	5.51	2.83	143.36	4.33	7.35	5.83	3.68

```

-----
| CALIB          |
| NASHYD ( 5011)| Area (ha)= 80.20 Curve Number (CN)= 65.0
|ID= 1 DT= 5.0 min| Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.85
  
```

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

```

Unit Hyd Qpeak (cms) = 3.621
PEAK FLOW (cms) = 3.123 (i)
TIME TO PEAK (hrs) = 3.833
RUNOFF VOLUME (mm) = 31.899
TOTAL RAINFALL (mm) = 91.900
RUNOFF COEFFICIENT = 0.347
  
```

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

```

-----
| CALIB          |
| STANDHYD ( 5012)| Area (ha)= 37.32
|ID= 1 DT= 5.0 min| Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00
  
```

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	14.18	23.14
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	498.80	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

```

Max.Eff.Inten.(mm/hr)= 143.36 90.00
                        over (min) 5.00 15.00
Storage Coeff. (min)= 5.80 (ii) 14.86 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.20 0.08
  
```

```

PEAK FLOW (cms) = 3.33 3.12 *TOTALS*
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 85.90 37.01 48.74
TOTAL RAINFALL (mm) = 91.90 91.90 91.90
  
```

RUNOFF COEFFICIENT = 0.93 0.40 0.53

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)|
| 1 + 2 = 3 |
-----
ID1= 1 ( 5011): 80.20 3.123 3.83 31.90
+ ID2= 2 ( 5012): 37.32 5.902 3.00 48.74
-----
ID = 3 ( 0100): 117.52 6.639 3.00 37.25
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ROUTE CHN ( 0502)|
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00
  
```

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	
187.19	88.84	0.1100	
211.21	88.88	0.1100	

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0100) 117.52 6.64 3.00 37.25 1.20 0.57  
 OUTFLOW: ID= 1 ( 0502) 117.52 4.27 3.92 37.24 1.09 0.65

```

-----
| CALIB          |
| NASHYD ( 5691)| Area (ha)= 2.30 Curve Number (CN)= 69.3
|ID= 1 DT= 5.0 min| Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.07
  
```

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68



0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.420 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 32.950  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.359

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

CALIB  
 NASHYD ( 5021) | Area (ha)= 3.67 Curve Number (CN)= 68.8  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.43

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68

1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.261 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 35.402  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.385

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

CALIB  
 STANDHYD ( 0575) | Area (ha)= 0.78  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.51 0.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 72.11 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68

1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68
-------	------	-------	--------	-------	------	------	------

Max.Eff.Inten.(mm/hr)= 143.36 over (min)= 5.00  
 Storage Coeff. (min)= 1.82 (ii) 10.99 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.32  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.20 0.04 0.236 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 43.54 71.07  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.47 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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 ( 5082) | Area (ha)= 0.71  
 ID= 1 DT= 5.0 min | Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.52 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 68.00 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68

0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 over (min)= 5.00  
 Storage Coeff. (min)= 1.77 (ii) 10.54 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.32  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.18 0.03 0.208 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 37.04 68.30  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.40 0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.7 Ia = Dep. 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 ( 0568) | Area (ha)= 0.53  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 59.44 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51

0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 52.83  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.62 (ii) 12.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.14 0.02 0.152 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 31.47 66.83  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.34 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0510) | Area (ha)= 0.76  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

Surface Area	(ha)=	0.59	0.17
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	71.18	40.00
Mannings n	=	0.013	0.250

ID= 1 DT= 5.0 min | Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

Surface Area	(ha)=	0.88	0.85
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	107.39	40.00
Mannings n	=	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.05  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.31 (ii) 11.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.35 0.15 0.475 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 50.07 68.19  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.54 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. Storage (Above)

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.05  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.80 (ii) 6.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.15

PEAK FLOW (cms)= 0.24 0.04 0.273 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 50.07 78.01  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.54 0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5092) | Area (ha)= 1.73

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

CALIB  
STANDHYD ( 0501) | Area (ha)= 6.23  
ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

Surface Area	(ha)=	2.62	3.61
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	203.80	40.00
Mannings n	=	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 44.23  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 3.39 (ii) 15.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.07

PEAK FLOW (cms)= 1.02 0.26 1.202 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00

RUNOFF VOLUME (mm)= 85.90 26.58 51.49  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.29 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.4 Ia = Dep. 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 ( 5282) | Area (ha)= 2.08  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.86  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.44 (ii) 11.10 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.54 0.13 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.645 (iii)  
 RUNOFF VOLUME (mm)= 85.90 50.50 73.51  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.55 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 0481)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0501): 6.23 1.202 3.00 51.49  
 + ID2= 2 ( 5021): 3.67 0.261 3.33 35.40  
 ID = 3 ( 0481): 9.90 1.346 3.00 45.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 9.90 1.346 3.00 45.53  
 + ID2= 2 ( 5082): 0.71 0.208 3.00 68.30  
 ID = 1 ( 0481): 10.61 1.554 3.00 47.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

ID1= 1 ( 0481): 10.61 1.554 3.00 47.05  
 + ID2= 2 ( 5092): 1.73 0.475 3.00 68.19  
 ID = 3 ( 0481): 12.34 2.029 3.00 50.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 12.34 2.029 3.00 50.02  
 + ID2= 2 ( 0510): 0.76 0.273 3.00 78.01  
 ID = 1 ( 0481): 13.10 2.302 3.00 51.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0481): 13.10 2.302 3.00 51.64  
 + ID2= 2 ( 5282): 2.08 0.645 3.00 73.51  
 ID = 3 ( 0481): 15.18 2.947 3.00 54.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 15.18 2.947 3.00 54.64  
 + ID2= 2 ( 0568): 0.53 0.152 3.00 66.83  
 ID = 1 ( 0481): 15.71 3.099 3.00 55.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0481): 15.71 3.099 3.00 55.05  
 + ID2= 2 ( 5691): 2.30 0.420 3.00 32.95

ID = 3 ( 0481): 18.01 3.519 3.00 52.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0481): 18.01 3.519 3.00 52.23  
 + ID2= 2 ( 0575): 0.78 0.236 3.00 71.07  
 ID = 1 ( 0481): 18.79 3.755 3.00 53.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 0524) | Area (ha)= 7.22 Curve Number (CN)= 80.7  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.20

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 1.222 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 48.516  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.528

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

CALIB  
 NASHYD ( 0522) Area (ha)= 3.31 Curve Number (CN)= 63.1  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.16

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.373 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 30.116  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.328

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

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0519) Area (ha)= 2.08  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 50.65  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.44 (ii) 13.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00

CALIB  
 STANDHYD ( 0580) Area (ha)= 1.87  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.22 0.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 111.65 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 52.83  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.36 (ii) 13.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.08

PEAK FLOW (cms)= 0.48 0.06 \*TOTALS\* 0.533 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 31.47 66.85  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.34 0.73

Unit Hyd. peak (cms)= 0.30 0.08 \*TOTALS\* 0.590 (iii)

PEAK FLOW (cms)= 0.54 0.07 0.590 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 30.24 66.41  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0529) Area (ha)= 1.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68

1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	60.35
over (min)	5.00	10.00
Storage Coeff. (min)=	2.34 (ii)	6.87 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.30	0.14
PEAK FLOW (cms)=	0.56	0.05
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	30.24
TOTAL RAINFALL (mm)=	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33

*TOTALS*	0.607 (iii)
PEAK FLOW (cms)=	0.56
TIME TO PEAK (hrs)=	3.00
RUNOFF VOLUME (mm)=	85.90
TOTAL RAINFALL (mm)=	91.90
RUNOFF COEFFICIENT =	0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0298)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0519):	2.08	0.590	3.00	66.41
+ ID2= 2 ( 0529):	1.80	0.607	3.00	73.65
ID = 3 ( 0298):	3.88	1.197	3.00	69.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0298)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0298):	3.88	1.197	3.00	69.77
+ ID2= 2 ( 0580):	1.87	0.533	3.00	66.85
ID = 1 ( 0298):	5.75	1.730	3.00	68.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0296)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0298):	5.75	1.730	3.00	68.82
+ ID2= 2 ( 0522):	3.31	0.373	3.00	30.12
ID = 3 ( 0296):	9.06	2.103	3.00	54.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	6.61
STANDHYD ( 0523)	Total Imp(%)=	75.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	50.00

Surface Area (ha)=	4.96	1.65
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	209.92	40.00
Mannings n =	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	3.68	2.083	11.03	3.583	9.19	5.08	3.68
0.667	3.68	2.167	11.03	3.667	9.19	5.17	3.68
0.750	3.68	2.250	11.03	3.750	9.19	5.25	3.68
0.833	3.68	2.333	11.03	3.833	9.19	5.33	3.68
0.917	3.68	2.417	11.03	3.917	9.19	5.42	3.68
1.000	3.68	2.500	11.03	4.000	9.19	5.50	3.68
1.083	3.68	2.583	55.14	4.083	7.35	5.58	3.68
1.167	3.68	2.667	55.14	4.167	7.35	5.67	3.68
1.250	3.68	2.750	99.25	4.250	7.35	5.75	3.68
1.333	3.68	2.833	99.25	4.333	7.35	5.83	3.68
1.417	3.68	2.917	143.36	4.417	7.35	5.92	3.68
1.500	3.68	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	185.04
over (min)	5.00	15.00

Storage Coeff. (min)=	3.45 (ii)	10.24 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.26	0.09
PEAK FLOW (cms)=	1.29	0.55
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	47.59
TOTAL RAINFALL (mm)=	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.52

*TOTALS*	1.766 (iii)
PEAK FLOW (cms)=	1.29
TIME TO PEAK (hrs)=	3.00
RUNOFF VOLUME (mm)=	85.90
TOTAL RAINFALL (mm)=	91.90
RUNOFF COEFFICIENT =	0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0291)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0296):	9.06	2.103	3.00	54.68
+ ID2= 2 ( 0523):	6.61	1.766	3.00	66.75
ID = 3 ( 0291):	15.67	3.869	3.00	59.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	1.45
STANDHYD ( 0525)	Total Imp(%)=	65.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

Surface Area (ha)=	0.94	0.51
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	98.32	40.00
Mannings n =	0.013	0.250

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51

0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	3.68	2.083	11.03	3.583	9.19	5.08	3.68
0.667	3.68	2.167	11.03	3.667	9.19	5.17	3.68
0.750	3.68	2.250	11.03	3.750	9.19	5.25	3.68
0.833	3.68	2.333	11.03	3.833	9.19	5.33	3.68
0.917	3.68	2.417	11.03	3.917	9.19	5.42	3.68
1.000	3.68	2.500	11.03	4.000	9.19	5.50	3.68
1.083	3.68	2.583	55.14	4.083	7.35	5.58	3.68
1.167	3.68	2.667	55.14	4.167	7.35	5.67	3.68
1.250	3.68	2.750	99.25	4.250	7.35	5.75	3.68
1.333	3.68	2.833	99.25	4.333	7.35	5.83	3.68
1.417	3.68	2.917	143.36	4.417	7.35	5.92	3.68
1.500	3.68	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	86.21
over (min)	5.00	15.00
Storage Coeff. (min)=	2.19 (ii)	11.41 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.09

PEAK FLOW (cms)=	0.37	0.07
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	43.01
TOTAL RAINFALL (mm)=	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.47

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0304)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0291):	15.67	3.869	3.00	59.77
+ ID2= 2 ( 0525):	1.45	0.436	3.00	70.88
ID = 3 ( 0304):	17.12	4.306	3.00	60.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0295)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0304):	17.12	4.306	3.00	60.71
+ ID2= 2 ( 0524):	7.22	1.222	3.08	48.52
=====				
ID = 3 ( 0295):	24.34	5.446	3.00	57.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0527)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	Dir. Conn.(%)=
	Total Imp(%)=		
	1.68		52.00
Surface Area (ha)=	1.28	0.40	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	105.83	40.00	
Mannings n =	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	241.10	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.29 (ii)	8.40 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.30	0.12	
*TOTALS*			
PEAK FLOW (cms)=	0.35	0.21	0.552 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	63.71	75.25
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.69	0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0301)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0295):	24.34	5.446	3.00	57.09
+ ID2= 2 ( 0527):	1.68	0.552	3.00	75.25
=====				
ID = 3 ( 0301):	26.02	5.998	3.00	58.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0520)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	Dir. Conn.(%)=
	Total Imp(%)=		
	2.27		61.00
Surface Area (ha)=	1.38	0.89	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	123.02	40.00	
Mannings n =	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0445)			
IN= 2----> OUT= 1			
DT= 5.0 min			
OVERFLOW IS OFF			
OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1400	0.8343
0.0195	0.2416	0.2360	1.0014
0.0700	0.5564	0.3420	1.6616
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0305)	28.290	6.662	3.00
OUTFLOW: ID= 1 ( 0445)	28.290	0.294	5.17
PEAK FLOW REDUCTION [Qout/Qin](%)= 4.42			
TIME SHIFT OF PEAK FLOW (min)=130.00			
MAXIMUM STORAGE USED (ha.m.)= 1.3646			

CALIB			
STANDHYD ( 0526)			
ID= 1 DT= 5.0 min			
	Area (ha)=	PERVIOUS (i)	Dir. Conn.(%)=
	Total Imp(%)=		
	0.94		78.00
Surface Area (ha)=	0.73	0.21	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	79.16	40.00	
Mannings n =	0.013	0.250	

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68

Max.Eff.Inten.(mm/hr)=	143.36	91.35	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.50 (ii)	11.51 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.29	0.09	
*TOTALS*			
PEAK FLOW (cms)=	0.55	0.14	0.664 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	45.60	70.18
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.50	0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0305)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0301):	26.02	5.998	3.00	58.27
+ ID2= 2 ( 0520):	2.27	0.664	3.00	70.18
=====				
ID = 3 ( 0305):	28.29	6.662	3.00	59.22

0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 91.63  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.92 (ii) 6.46 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*  
PEAK FLOW (cms)= 0.29 0.04 0.333 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 45.74 77.06  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.50 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0310)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
0.940	0.333	3.00	77.06
0.940	0.054	3.33	76.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.15  
TIME SHIFT OF PEAK FLOW (min)= 20.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0461

CALIB  
STANDHYD ( 0574)  
ID= 1 DT= 5.0 min

Area (ha)= 1.44  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

Surface Area (ha)	IMPERVIOUS	PERVIOUS (i)
1.12	0.32	
6.00	8.00	
1.00	1.00	
97.98	40.00	
0.013	0.250	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 76.27  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.19 (ii) 6.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*  
PEAK FLOW (cms)= 0.45 0.05 0.497 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 38.06 75.37  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.41 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0307)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.440	0.497	3.00	75.37
1.440	0.083	3.25	74.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.71  
TIME SHIFT OF PEAK FLOW (min)= 15.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0686

Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 128.60  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.78 (ii) 12.64 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 3.73 1.32 4.841 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 41.88 63.89  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.46 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.6 Ia = Dep. 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 ( 0571)  
ID= 1 DT= 5.0 min

Area (ha)= 19.59  
Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

Surface Area (ha)	IMPERVIOUS	PERVIOUS (i)
13.32	6.27	
6.00	8.00	
1.00	1.00	
361.39	40.00	

CALIB

STANDHYD ( 0572) | Area (ha)= 11.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.03 3.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 274.59 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 189.63  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.05 (ii) 10.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

PEAK FLOW (cms)= 2.19 1.12 \*TOTALS\* 3.167 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 56.97 71.44  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.62 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 76.1 Ia = Dep. 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 ( 0314) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0571): 19.59 4.841 3.00 63.89  
 + ID2= 2 ( 0572): 11.31 3.167 3.00 71.44  
 ID = 3 ( 0314): 30.90 8.009 3.00 66.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |  
 STANDHYD ( 0573) | Area (ha)= 2.66  
 ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.60 1.06  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 133.17 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68

1.250 5.51 | 2.750 99.25 | 4.250 7.35 | 5.75 3.68  
 1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68  
 1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 83.26  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.63 (ii) 11.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.63 0.15 \*TOTALS\* 0.754 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 41.53 68.15  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.45 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.8 Ia = Dep. 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 ( 0317) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0314): 30.90 8.009 3.00 66.65  
 + ID2= 2 ( 0573): 2.66 0.754 3.00 68.15  
 ID = 3 ( 0317): 33.56 8.763 3.00 66.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0446) | OVERFLOW IS OFF  
 IN= 2---> OUT= 1 |  
 DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.2300	1.1312
0.0230	0.3704	0.2810	1.3850
0.0900	0.8066	0.4120	2.2335

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 INFLOW : ID= 2 ( 0317) 33.560 8.763 3.00 66.77

OUTFLOW: ID= 1 ( 0446) 33.560 0.354 5.17 66.06

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.04  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.8591

ADD HYD ( 0102) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0306): 2.38 0.137 3.25 75.57  
 + ID2= 2 ( 0445): 28.29 0.294 5.17 58.99  
 ID = 3 ( 0102): 30.67 0.405 3.58 60.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
 3 + 2 = 1 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 3 ( 0102): 30.67 0.405 3.58 60.28  
 + ID2= 2 ( 0446): 33.56 0.354 5.17 66.06  
 ID = 1 ( 0102): 64.23 0.735 3.83 63.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0102): 64.23 0.735 3.83 63.30  
 + ID2= 2 ( 0481): 18.79 3.755 3.00 53.01  
 ID = 3 ( 0102): 83.02 4.141 3.00 60.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
 3 + 2 = 1 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 3 ( 0102): 83.02 4.141 3.00 60.97  
 + ID2= 2 ( 0502): 117.52 4.275 3.92 37.24



=====  
 ID = 1 ( 0102): 200.54 6.511 3.00 47.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48

TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.408

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

CALIB  
 STANDHYD ( 5032) | Area (ha)= 12.20  
 ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 7.20 5.00  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 285.19 40.00  
 Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 113.20  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.15 (ii) 12.42 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 2.21 0.94 3.003 (iii)

3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 200.54 6.51 3.00 47.07 1.34 1.13  
 OUTFLOW: ID= 1 ( 0503) 200.54 5.80 3.08 47.07 1.27 1.09

CALIB  
 NASHYD ( 5031) | Area (ha)= 1.70 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.82

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.079

PEAK FLOW (cms)= 0.080 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 37.512

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 44.26 63.83  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.48 0.69

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5031): 1.70 0.080 3.83 37.51  
 + ID2= 2 ( 5032): 12.20 3.003 3.00 63.83  
 ID = 3 ( 0103): 13.90 3.023 3.00 60.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0103): 13.90 3.023 3.00 60.61  
 + ID2= 2 ( 0503): 200.54 5.797 3.08 47.07  
 ID = 3 ( 0104): 214.44 8.472 3.00 47.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900



1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.095 (i)
TIME TO PEAK (hrs)= 3.917
RUNOFF VOLUME (mm)= 44.057
TOTAL RAINFALL (mm)= 91.900
RUNOFF COEFFICIENT = 0.479

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

CALIB
STANDHYD ( 5212)
ID= 1 DT= 5.0 min
Area (ha)= 13.80
Total Imp(%)= 52.00
Dir. Conn.(%)= 40.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 7.18 6.62
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 303.32 40.00
Mannings n = 0.013 0.250

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data from 0.083 to 1.500 hours.

Max.Eff.Inten.(mm/hr)= 143.36 123.41
over (min) 5.00 15.00
Storage Coeff. (min)= 4.30 (ii) 12.29 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.23 0.09
PEAK FLOW (cms)= 2.12 1.38
TIME TO PEAK (hrs)= 3.00 3.08
RUNOFF VOLUME (mm)= 85.90 50.00
TOTAL RAINFALL (mm)= 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.54

\*TOTALS\*

3.297 (iii)
3.00
64.36
91.90
0.70

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 77.0 Ia = Dep. 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 ( 5211): 1.90 0.095 3.92 44.06
+ ID2= 2 ( 5212): 13.80 3.297 3.00 64.36
ID = 3 ( 0112): 15.70 3.317 3.00 61.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0106): 222.14 7.092 3.17 48.52
+ ID2= 2 ( 0112): 15.70 3.317 3.00 61.90
ID = 3 ( 0114): 237.84 10.149 3.00 49.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)
IN= 2--> OUT= 1
Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Table with 3 columns: Distance, Elevation, Manning. Rows show data from 0.00 to 501.51 distance.

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

Table with 6 columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV. TIME. Rows show travel time data for various depths and elevations.

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

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
MAX DEPTH MAX VEL
(m) (m/s)
INFLOW: ID= 2 ( 0114) 237.84 10.15 3.00 49.41 0.74 0.53
OUTFLOW: ID= 1 ( 0505) 237.84 9.44 3.08 49.40 0.71 0.52

CALIB
NASHYD ( 5051)
ID= 1 DT= 5.0 min
Area (ha)= 1.30
Curve Number (CN)= 68.0
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.62

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

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data from 0.083 to 1.500 hours.

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.069 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 34.601
TOTAL RAINFALL (mm)= 91.900
RUNOFF COEFFICIENT = 0.377

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

CALIB
STANDHYD ( 5052)
ID= 1 DT= 5.0 min
Area (ha)= 14.60
Total Imp(%)= 66.00
Dir. Conn.(%)= 54.00

-----  
 Surface Area (ha)= 9.64 IMPERVIOUS 4.96 PERVIOUS (i)  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 311.98 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 113.36  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.38 (ii) 12.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.03 0.92 3.803 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 42.41 65.89  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.46 0.72

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

346.67 80.41 0.0900  
 387.99 80.33 0.0900  
 415.54 80.53 0.0900  
 447.88 80.49 0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0108)	253.74	12.29	3.00	50.28	1.67	1.06
OUTFLOW: ID= 1 ( 0506)	253.74	11.16	3.17	50.28	1.62	1.12

-----  
 | CALIB |  
 | NASHYD ( 5061) | Area (ha)= 3.90 Curve Number (CN)= 71.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51

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 ( 5051):	1.30	0.069	3.58	34.60
+ ID2= 2 ( 5052):	14.60	3.803	3.00	65.89
-----				
ID = 3 ( 0107):	15.90	3.828	3.00	63.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0108) |  
 | 1 + 2 = 3 |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0107):	15.90	3.828	3.00	63.34
+ ID2= 2 ( 0505):	237.84	9.437	3.08	49.40
-----				
ID = 3 ( 0108):	253.74	12.292	3.00	50.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0506) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	

Unit Hyd Qpeak (cms)= 0.239  
 PEAK FLOW (cms)= 0.227 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 37.512  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.408

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

-----  
 | CALIB |  
 | STANDHYD ( 5062) | Area (ha)= 7.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51

0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 119.99  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.63 (ii) 11.71 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.25 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 1.61 0.56 2.083 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 45.26 66.80  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.49 0.73

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0109)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5061):	3.90	0.227	3.58	37.51
+ ID2= 2 ( 5062):	7.80	2.083	3.00	66.80
=====				
ID = 3 ( 0109):	11.70	2.166	3.00	57.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0109):	11.70	2.166	3.00	57.04
+ ID2= 2 ( 0506):	253.74	11.165	3.17	50.28
=====				
ID = 3 ( 0110):	265.44	12.380	3.08	50.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
NASHYD ( 5101)				
ID= 1 DT= 5.0 min				
	Area	(ha)=	0.80	Curve Number (CN)= 66.0
	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
	U.H. Tp	(hrs)=	1.42	

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

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51	0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51	0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51	0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68	0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68	0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68	1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68	1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68	1.333	5.51	2.833	99.25
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68	1.500	5.51	3.000	143.36
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.022 (i)  
TIME TO PEAK (hrs)= 4.583  
RUNOFF VOLUME (mm)= 32.775  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.357

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

CALIB			
STANDHYD ( 5102)			
ID= 1 DT= 5.0 min			
	Area	(ha)=	0.90
	Total Imp	(%)=	50.00
	Dir. Conn.	(%)=	35.00
=====			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	0.45	0.45
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	77.46	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51	0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51	0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51	0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68	0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68	0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68	1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68	1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68	1.333	5.51	2.833	99.25
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68	1.500	5.51	3.000	143.36
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Max.Eff.Inten.(mm/hr)= 143.36 101.50  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.90 (ii) 10.53 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.13 0.08 0.192 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 39.44 55.70  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90

RUNOFF COEFFICIENT = 0.93 0.43 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0115)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5101):	0.80	0.022	4.58	32.78
+ ID2= 2 ( 5102):	0.90	0.192	3.00	55.70
=====				
ID = 3 ( 0115):	1.70	0.195	3.00	44.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)	
IN= 2----> OUT= 1	
Routing time step (min)= 5.00	

<----- DATA FOR SECTION ( 553.6) ----->			
Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

<----- TRAVEL TIME TABLE ----->						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.12	79.13	.361E+03	0.6	0.24	9.91	
0.23	79.25	.776E+03	2.1	0.40	6.09	
0.35	79.37	.121E+04	4.3	0.52	4.65	
0.47	79.48	.165E+04	7.1	0.63	3.85	
0.59	79.60	.211E+04	10.5	0.72	3.34	
0.70	79.72	.258E+04	14.4	0.81	2.98	
0.82	79.84	.307E+04	18.8	0.89	2.71	

0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	1.09E+05	104.8	1.39	1.74
2.25	81.27	1.40E+05	120.9	1.25	1.93

```

<---- hydrograph ----> <-pipe / channel->
AREA   QPEAK  TPEAK  R.V.   MAX DEPTH  MAX VEL
(ha)   (cms)   (hrs)  (mm)   (m)         (m/s)
INFLOW : ID= 2 ( 0115) 1.70  0.19  3.00  44.91  0.04  0.24
OUTFLOW: ID= 1 ( 0511) 1.70  0.14  3.08  44.91  0.03  0.24

```

```

| CALIB |
| NASHYD ( 5111) | Area (ha)= 1.90 Curve Number (CN)= 67.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.56

```

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 3.68 | 1.583 9.19 | 3.083 20.22 | 4.58 5.51
0.167 3.68 | 1.667 9.19 | 3.167 20.22 | 4.67 5.51
0.250 3.68 | 1.750 9.19 | 3.250 20.22 | 4.75 5.51
0.333 3.68 | 1.833 9.19 | 3.333 20.22 | 4.83 5.51
0.417 3.68 | 1.917 9.19 | 3.417 20.22 | 4.92 5.51
0.500 3.68 | 2.000 9.19 | 3.500 20.22 | 5.00 5.51
0.583 5.51 | 2.083 11.03 | 3.583 9.19 | 5.08 3.68
0.667 5.51 | 2.167 11.03 | 3.667 9.19 | 5.17 3.68
0.750 5.51 | 2.250 11.03 | 3.750 9.19 | 5.25 3.68
0.833 5.51 | 2.333 11.03 | 3.833 9.19 | 5.33 3.68
0.917 5.51 | 2.417 11.03 | 3.917 9.19 | 5.42 3.68
1.000 5.51 | 2.500 11.03 | 4.000 9.19 | 5.50 3.68
1.083 5.51 | 2.583 11.03 | 4.083 7.35 | 5.58 3.68
1.167 5.51 | 2.667 11.03 | 4.167 7.35 | 5.67 3.68
1.250 5.51 | 2.750 99.25 | 4.250 7.35 | 5.75 3.68
1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68

```

1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.129

PEAK FLOW (cms)= 0.106 (i)  
 TIME TO PEAK (hrs)= 3.500  
 RUNOFF VOLUME (mm)= 33.678  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.366

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

```

| CALIB |
| STANDHYD ( 5112) | Area (ha)= 1.10
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

```

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.55	0.55	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	85.63	40.00	
Mannings n =	0.013	0.250	

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

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 3.68 | 1.583 9.19 | 3.083 20.22 | 4.58 5.51
0.167 3.68 | 1.667 9.19 | 3.167 20.22 | 4.67 5.51
0.250 3.68 | 1.750 9.19 | 3.250 20.22 | 4.75 5.51
0.333 3.68 | 1.833 9.19 | 3.333 20.22 | 4.83 5.51
0.417 3.68 | 1.917 9.19 | 3.417 20.22 | 4.92 5.51
0.500 3.68 | 2.000 9.19 | 3.500 20.22 | 5.00 5.51
0.583 5.51 | 2.083 11.03 | 3.583 9.19 | 5.08 3.68
0.667 5.51 | 2.167 11.03 | 3.667 9.19 | 5.17 3.68
0.750 5.51 | 2.250 11.03 | 3.750 9.19 | 5.25 3.68
0.833 5.51 | 2.333 11.03 | 3.833 9.19 | 5.33 3.68
0.917 5.51 | 2.417 11.03 | 3.917 9.19 | 5.42 3.68
1.000 5.51 | 2.500 11.03 | 4.000 9.19 | 5.50 3.68
1.083 5.51 | 2.583 11.03 | 4.083 7.35 | 5.58 3.68
1.167 5.51 | 2.667 11.03 | 4.167 7.35 | 5.67 3.68
1.250 5.51 | 2.750 99.25 | 4.250 7.35 | 5.75 3.68
1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68

```

Max.Eff.Inten.(mm/hr)=	143.36	114.19	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.02 (ii)	10.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.31	0.09	
PEAK FLOW (cms)=	0.15	0.11	0.248 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	44.41	58.93
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.48	0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0116) |
| 1 + 2 = 3 |
|-----| AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 5111): 1.90 0.106 3.50 33.68
+ ID2= 2 ( 5112): 1.10 0.248 3.00 58.93
=====
ID = 3 ( 0116): 3.00 0.291 3.00 42.94

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0117) |
| 1 + 2 = 3 |
|-----| AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0116): 3.00 0.291 3.00 42.94
+ ID2= 2 ( 0511): 1.70 0.141 3.08 44.91
=====
ID = 3 ( 0117): 4.70 0.426 3.00 43.65

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0512) |
| IN= 2----> OUT= 1 | Routing time step (min)= 5.00

```

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900
41.13	82.12	0.0900 / 0.0700
46.88	79.71	0.0700
51.41	80.90	0.0700 / 0.0900
94.29	80.56	0.0900
175.64	80.72	0.0900
192.09	80.85	0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

```

<---- hydrograph ----> <-pipe / channel->
AREA   QPEAK  TPEAK  R.V.   MAX DEPTH  MAX VEL
(ha)   (cms)   (hrs)  (mm)   (m)         (m/s)
INFLOW : ID= 2 ( 0117) 4.70  0.43  3.00  43.65  0.59  0.38
OUTFLOW: ID= 1 ( 0512) 4.70  0.27  3.25  43.64  0.50  0.34

```

```

| CALIB |
| NASHYD ( 5121) | Area (ha)= 0.70 Curve Number (CN)= 71.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 1.14

```

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

--- TRANSFORMED HYETOGRAPH ---			
TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19
0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19
0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19
0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03
0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03
0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03
1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14
1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25
1.333	5.51	2.833	99.25
1.417	5.51	2.917	143.36
1.500	5.51	3.000	143.36

Unit Hyd Qpeak (cms) = 0.023

PEAK FLOW (cms) = 0.026 (i)  
 TIME TO PEAK (hrs) = 4.167  
 RUNOFF VOLUME (mm) = 37.509  
 TOTAL RAINFALL (mm) = 91.900  
 RUNOFF COEFFICIENT = 0.408

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

CALIB  
 STANDHYD ( 5122)  
 ID= 1 DT= 5.0 min

Area (ha) = 3.20  
 Total Imp(%) = 60.00 Dir. Conn.(%) = 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.92	1.28
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	146.06	40.00
Mannings n	0.013	0.250

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

ID1= 1 ( 5121):	0.70	0.026	4.17	37.51
+ ID2= 2 ( 5122):	3.20	0.816	3.00	64.17
-----				
ID = 3 ( 0118):	3.90	0.821	3.00	59.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):	3.90	0.821	3.00	59.39
+ ID2= 2 ( 0512):	4.70	0.270	3.25	43.64
-----				
ID = 3 ( 0119):	8.60	1.020	3.00	50.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0110):	265.44	12.380	3.08	50.57
+ ID2= 2 ( 0119):	8.60	1.020	3.00	50.78
-----				
ID = 3 ( 0120):	274.04	13.087	3.00	50.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6011)  
 ID= 1 DT= 5.0 min

Area (ha) = 44.10 Curve Number (CN) = 62.0  
 Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
 U.H. Tp (hrs) = 0.83

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

--- TRANSFORMED HYETOGRAPH ---			
TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19
0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19
0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19
0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03
0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03
0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03
1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14
1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25
1.333	5.51	2.833	99.25
1.417	5.51	2.917	143.36
1.500	5.51	3.000	143.36

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 117.57  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 2.78 (ii) 10.92 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.28 0.09

\*TOTALS\*  
 PEAK FLOW (cms) = 0.59 0.26 0.816 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 85.90 44.91 64.17  
 TOTAL RAINFALL (mm) = 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.49 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 71.0 Ia = Dep. 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 ( 0118)  
 1 + 2 = 3

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

0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms) = 2.027

PEAK FLOW (cms) = 1.596 (i)  
 TIME TO PEAK (hrs) = 3.833  
 RUNOFF VOLUME (mm) = 29.382  
 TOTAL RAINFALL (mm) = 91.900  
 RUNOFF COEFFICIENT = 0.320

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

CALIB  
 STANDHYD ( 6012)  
 ID= 1 DT= 5.0 min

Area (ha) = 11.00  
 Total Imp(%) = 28.00 Dir. Conn.(%) = 16.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	3.08	7.92
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	270.80	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---			
TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19
0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19
0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19
0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03
0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03
0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03
1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14
1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25
1.333	5.51	2.833	99.25
1.417	5.51	2.917	143.36
1.500	5.51	3.000	143.36

0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 76.68  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.02 (ii) 13.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 0.68 0.94 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 1.451 (iii)  
RUNOFF VOLUME (mm)= 85.90 33.10 41.55  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.36 0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6011):	44.10	1.596	3.83	29.38
+ ID2= 2 ( 6012):	11.00	1.451	3.00	41.55
=====				
ID = 3 ( 0124):	55.10	1.931	3.50	31.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6021)			
ID= 1 DT= 5.0 min			
Area	(ha)=	43.60	Curve Number (CN)= 62.0
Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
U.H. Tp	(hrs)=	0.95	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.426 (i)  
TIME TO PEAK (hrs)= 4.000  
RUNOFF VOLUME (mm)= 29.382  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.320

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

CALIB			
STANDHYD ( 6022)			
ID= 1 DT= 5.0 min			
Area	(ha)=	12.90	
Total Imp	(%)=	35.00	Dir. Conn.(%)= 23.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area	(ha)=	4.51	8.38		
Dep. Storage	(mm)=	6.00	8.00		
Average Slope	(%)=	1.00	1.00		
Length	(m)=	293.26	40.00		
Mannings n	=	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 78.70  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.22 (ii) 13.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 1.14 1.02 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 1.979 (iii)  
RUNOFF VOLUME (mm)= 85.90 33.48 45.53  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.36 0.50

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0125)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)

ID1= 1 ( 6021):	43.60	1.426	4.00	29.38
+ ID2= 2 ( 6022):	12.90	1.979	3.00	45.53
=====				
ID = 3 ( 0125):	56.50	2.259	3.00	33.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0124):	55.10	1.931	3.50	31.81
+ ID2= 2 ( 0125):	56.50	2.259	3.00	33.07
=====				
ID = 3 ( 0126):	111.60	4.090	3.00	32.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)	
IN= 2--> OUT= 1	
Routing time step (min)= 5.00	

<----- DATA FOR SECTION (2135.9) ----->					
Distance	Elevation	Manning			
0.00	92.58	0.1400			
8.54	92.59	0.1400			
22.11	92.47	0.1400			
48.74	91.83	0.1400			
67.59	91.58	0.1400			
86.45	91.21	0.1400			
103.50	90.80	0.1400			
118.09	90.23	0.1400			
127.84	90.09	0.1400 / 0.0700	Main Channel		
129.84	89.59	0.0700	Main Channel		
130.34	90.09	0.0700 / 0.1400	Main Channel		
140.57	90.14	0.1400			
161.87	90.11	0.1400			
177.03	90.04	0.1400			
188.67	89.87	0.1400			
199.59	90.31	0.1400			
212.02	90.96	0.1400			
225.58	91.35	0.1400			
252.71	91.66	0.1400			
274.11	91.86	0.1400			

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29



0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.642 (i)  
 TIME TO PEAK (hrs)= 4.417  
 RUNOFF VOLUME (mm)= 38.533  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.419

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

		<--- hydrograph --->			<-pipe / channel-->		
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0126)	111.60	4.09	3.00	32.45	0.69	0.24	
OUTFLOW: ID= 1 ( 0603)	111.60	2.68	4.50	32.44	0.62	0.22	

CALIB			
STANDHYD ( 6032)		Area (ha)= 10.73	
ID= 1 DT= 5.0 min		Total Imp(%)= 28.00	Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.00 7.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 267.46 40.00  
 Mannings n = 0.013 0.250

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

-----  
 | CALIB |  
 | NASHYD ( 6031) | Area (ha)= 19.00 Curve Number (CN)= 72.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 |-----| U.H. Tp(hrs)= 1.32

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68

1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.72  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.99 (ii) 12.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.62 1.27 1.688 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 42.93 49.37  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.47 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0127)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6031):	19.00	0.642	4.42	38.53
+ ID2= 2 ( 6032):	10.73	1.688	3.00	49.37
ID = 3 ( 0127):	29.73	1.770	3.00	42.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 6131) | Area (ha)= 1.77 Curve Number (CN)= 66.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 |-----| U.H. Tp(hrs)= 0.22

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.182 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 32.738  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.356

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

CALIB			
STANDHYD ( 6222)		Area (ha)= 2.02	
ID= 1 DT= 5.0 min		Total Imp(%)= 78.00	Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.58 0.44  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 116.05 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 72.85  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.42 (ii) 6.95 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*

PEAK FLOW (cms)= 0.62 0.07 0.692 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 36.38 75.00  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.40 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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)=	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 6142)	1.50	1.04	0.47
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	Dir. Conn.(%)= 50.00	
Surface Area (ha)=			
Dep. Storage (mm)=			

Average Slope (%)= 1.00 1.00  
Length (m)= 100.00 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 133.49  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.21 (ii) 9.95 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.11

\*TOTALS\*

PEAK FLOW (cms)= 0.30 0.12 0.414 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 42.17 64.03  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.46 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)=	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 6152)	2.14	1.67	0.47
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	Dir. Conn.(%)= 78.00	
Surface Area (ha)=			
Dep. Storage (mm)=			
Average Slope (%)=			
Length (m)=			
Mannings n =			

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 72.85  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.46 (ii) 7.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*

PEAK FLOW (cms)= 0.66 0.07 0.733 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 36.38 75.00  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.40 0.82

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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)=	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 6182)	1.49	1.16	0.33
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	Dir. Conn.(%)= 50.00	
Surface Area (ha)=			
Dep. Storage (mm)=			
Average Slope (%)=			
Length (m)=			
Mannings n =			

Surface Area (ha)= 1.16 0.33  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 99.67 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 222.82  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.21 (ii) 8.51 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.12

\*TOTALS\*

PEAK FLOW (cms)=	0.30	0.15	0.445 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	50.76	68.32
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.55	0.74

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.81	0.05
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	75.72	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68

0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 248.28  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.52 (ii) 8.56 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.12

\*TOTALS\*

PEAK FLOW (cms)=	0.46	0.26	0.718 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	57.07	71.48
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.62	0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0342) |  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

ID1= 1 ( 6142):	1.50	0.414	3.00	64.03
+ ID2= 2 ( 6152):	2.14	0.733	3.00	75.00
=====				
ID = 3 ( 0342):	3.64	1.148	3.00	70.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342) |  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

ID1= 3 ( 0342):	3.64	1.148	3.00	70.48
-----------------	------	-------	------	-------

1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 60.35  
over (min) = 5.00 5.00  
Storage Coeff. (min)= 1.87 (ii) 4.37 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.32 0.23

\*TOTALS\*

PEAK FLOW (cms)=	0.32	0.01	0.330 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	30.24	82.56
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33	0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6172) | Area (ha)= 2.31  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.80	0.51
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	124.10	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68

+ ID2= 2 ( 6172): 2.31 0.718 3.00 71.48  
=====

ID = 1 ( 0342): 5.95 1.866 3.00 70.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342) |  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

ID1= 1 ( 0342):	5.95	1.866	3.00	70.87
+ ID2= 2 ( 6182):	1.49	0.445	3.00	68.32
=====				
ID = 3 ( 0342):	7.44	2.311	3.00	70.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342) |  
3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

ID1= 3 ( 0342):	7.44	2.311	3.00	70.36
+ ID2= 2 ( 6222):	2.02	0.692	3.00	75.00
=====				
ID = 1 ( 0342):	9.46	3.003	3.00	71.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342) |  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)

ID1= 1 ( 0342):	9.46	3.003	3.00	71.35
+ ID2= 2 ( 6302):	0.86	0.330	3.00	82.56
=====				
ID = 3 ( 0342):	10.32	3.333	3.00	72.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 6212) | Area (ha)= 1.15  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.75	0.40
Dep. Storage (mm)=	6.00	8.00

Average Slope (%)= 1.00 1.00  
 Length (m)= 87.56 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 50.65  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.04 (ii) 13.45 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.30 0.04  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 85.90 30.24 66.41  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6232) Area (ha)= 0.85  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area (ha)= 0.55 0.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.28 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 50.65  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.87 (ii) 13.27 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.22 0.03  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 85.90 30.24 66.41  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0488)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6212):	1.15	0.327	3.00	66.41
+ ID2= 2 ( 6232):	0.85	0.242	3.00	66.41
ID = 3 ( 0488):	2.00	0.570	3.00	66.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6262) Area (ha)= 0.96  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

Surface Area (ha)= 0.58 0.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 80.00 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68

1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.93 (ii) 10.88 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.23 0.06  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 85.90 46.42 70.10  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.51 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0346)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	10.32	3.333	3.00	72.29
+ ID2= 2 ( 0488):	2.00	0.570	3.00	66.41
ID = 3 ( 0346):	12.32	3.903	3.00	71.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)  
 3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0346):	12.32	3.903	3.00	71.33
+ ID2= 2 ( 6131):	1.77	0.182	3.08	32.74
ID = 1 ( 0346):	14.09	4.060	3.00	66.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0346):	14.09	4.060	3.00	66.48
+ ID2= 2 ( 6262):	0.96	0.282	3.00	70.10
=====				
ID = 3 ( 0346):	15.05	4.341	3.00	66.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0447)	OVERFLOW IS OFF			
IN= 2----> OUT= 1	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
DT= 5.0 min	0.0000	0.0000	0.1070	0.3146
	0.0150	0.1715	0.7100	0.8031
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0346)	15.050	4.341	3.00	66.71
OUTFLOW: ID= 1 ( 0447)	15.050	0.551	3.58	66.52
PEAK FLOW REDUCTION [Qout/Qin](%)= 12.70				
TIME SHIFT OF PEAK FLOW (min)= 35.00				
MAXIMUM STORAGE USED (ha.m.)= 0.6752				

CALIB	STANDHYD ( 6202)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		1.26	94.00
-----			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.18	0.08	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	91.65	40.00	
Mannings n	0.013	0.250	

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

INFLOW : ID= 2 ( 6202)	1.260	0.483	3.00	82.56
OUTFLOW: ID= 1 ( 0491)	1.260	0.047	3.58	81.74

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.81  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0745

CALIB	STANDHYD ( 6062)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		1.98	65.00
-----			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.29	0.69	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	114.89	40.00	
Mannings n	0.013	0.250	

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

Max.Eff.Inten.(mm/hr)=	143.36	50.65
over (min)	5.00	15.00
Storage Coeff. (min)=	2.40 (ii)	13.81 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.30	0.08

0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	60.35
over (min)	5.00	5.00
Storage Coeff. (min)=	2.10 (ii)	4.60 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.31	0.23
*TOTALS*		
PEAK FLOW (cms)=	0.47	0.01
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	30.24
TOTAL RAINFALL (mm)=	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0491)	OVERFLOW IS OFF			
IN= 2----> OUT= 1	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
DT= 5.0 min	0.0000	0.0000	0.0580	0.0848
	0.0090	0.0366	0.0000	0.0000

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

PEAK FLOW (cms)=	0.51	0.06
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	85.90	30.24
TOTAL RAINFALL (mm)=	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6122)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		2.18	94.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.05	0.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	120.55	40.00
Mannings n	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68

1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 60.35  
over (min) = 5.00 5.00  
Storage Coeff. (min)= 2.47 (ii) 4.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.29 0.22  
\*TOTALS\*  
PEAK FLOW (cms)= 0.81 0.02 0.833 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 30.24 82.56  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.33 0.90

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 1000)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW STORAGE | OUTFLOW STORAGE  
(cms) (ha.m.) | (cms) (ha.m.)  
0.0000 0.0000 | 0.1000 0.1464  
0.0159 0.0631 | 0.0000 0.0000

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
INFLOW : ID= 2 ( 6122) 2.180 0.833 3.00 82.56  
OUTFLOW: ID= 1 ( 1000) 2.180 0.082 3.58 82.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.84  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.1288

ADD HYD ( 0493)  
1 + 2 = 3

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
+ ID1= 1 ( 1000): 2.18 0.082 3.58 82.10  
+ ID2= 2 ( 0491): 1.26 0.047 3.58 81.74

ID = 3 ( 0493): 3.44 0.129 3.58 81.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)  
3 + 2 = 1

AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0493): 3.44 0.129 3.58 81.97  
+ ID2= 2 ( 0062): 1.98 0.562 3.00 66.41  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0319)  
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

DATA FOR SECTION (2135.9)

Distance Elevation Manning  
0.00 92.50 0.0700  
36.57 92.00 0.0700  
90.03 91.00 0.0700  
124.58 90.00 0.0700 / 0.0350 Main Channel  
128.34 89.59 0.0350 Main Channel  
129.84 89.59 0.0350 Main Channel  
132.39 90.00 0.0350 / 0.0700 Main Channel  
163.76 91.00 0.0700  
187.47 91.00 0.0700  
203.83 91.00 0.0700  
306.44 92.00 0.0700

TRAVEL TIME TABLE

DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME  
(m) (m) (cu.m.) (cms) (m/s) (min)  
0.10 89.69 .215E+03 0.1 0.46 33.36  
0.20 89.79 .579E+03 0.4 0.67 22.75  
0.31 89.90 .109E+04 1.0 0.84 18.13  
0.41 90.00 .175E+04 1.9 0.99 15.37  
0.54 90.13 .324E+04 4.0 1.14 13.36  
0.68 90.27 .581E+04 7.3 1.15 13.32  
0.81 90.40 .945E+04 11.9 1.15 13.29  
0.94 90.53 .142E+05 18.0 1.17 13.10  
1.08 90.67 .200E+05 26.0 1.19 12.79  
1.21 90.80 .268E+05 36.0 1.23 12.42  
1.34 90.93 .348E+05 48.2 1.27 12.03  
1.48 91.07 .464E+05 58.3 1.15 13.27  
1.61 91.20 .629E+05 78.8 1.15 13.30

1.74 91.33 .819E+05 104.3 1.17 13.08  
1.88 91.47 .103E+06 135.3 1.20 12.74  
2.01 91.60 .128E+06 172.1 1.24 12.35  
2.14 91.73 .154E+06 215.1 1.28 11.94  
2.28 91.87 .183E+06 264.7 1.32 11.54  
2.41 92.00 .215E+06 321.3 1.37 11.15

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

AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0493) 5.42 0.66 3.00 76.29 0.25 0.73  
OUTFLOW: ID= 1 ( 0319) 5.42 0.34 3.08 76.28 0.18 0.60

CALIB  
STANDHYD ( 6162)  
ID= 1 DT= 5.0 min

Area (ha)= 0.44  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.10  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 54.16 40.00  
Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH  
TIME RAIN TIME RAIN TIME RAIN  
hrs mm/hr hrs mm/hr hrs mm/hr  
0.083 3.68 1.583 9.19 3.083 20.22 4.58 5.51  
0.167 3.68 1.667 9.19 3.167 20.22 4.67 5.51  
0.250 3.68 1.750 9.19 3.250 20.22 4.75 5.51  
0.333 3.68 1.833 9.19 3.333 20.22 4.83 5.51  
0.417 3.68 1.917 9.19 3.417 20.22 4.92 5.51  
0.500 3.68 2.000 9.19 3.500 20.22 5.00 5.51  
0.583 5.51 2.083 11.03 3.583 9.19 5.08 3.68  
0.667 5.51 2.167 11.03 3.667 9.19 5.17 3.68  
0.750 5.51 2.250 11.03 3.750 9.19 5.25 3.68  
0.833 5.51 2.333 11.03 3.833 9.19 5.33 3.68  
0.917 5.51 2.417 11.03 3.917 9.19 5.42 3.68  
1.000 5.51 2.500 11.03 4.000 9.19 5.50 3.68  
1.083 5.51 2.583 55.14 4.083 7.35 5.58 3.68  
1.167 5.51 2.667 55.14 4.167 7.35 5.67 3.68  
1.250 5.51 2.750 99.25 4.250 7.35 5.75 3.68  
1.333 5.51 2.833 99.25 4.333 7.35 5.83 3.68

1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
over (min) = 5.00 5.00  
Storage Coeff. (min)= 1.53 (ii) 6.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.33 0.15

\*TOTALS\*  
PEAK FLOW (cms)= 0.14 0.02 0.157 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 46.42 77.21  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102)  
ID= 1 DT= 5.0 min

Area (ha)= 2.49  
Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.94 0.55  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 128.84 40.00  
Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH  
TIME RAIN TIME RAIN TIME RAIN  
hrs mm/hr hrs mm/hr hrs mm/hr  
0.083 3.68 1.583 9.19 3.083 20.22 4.58 5.51  
0.167 3.68 1.667 9.19 3.167 20.22 4.67 5.51  
0.250 3.68 1.750 9.19 3.250 20.22 4.75 5.51  
0.333 3.68 1.833 9.19 3.333 20.22 4.83 5.51  
0.417 3.68 1.917 9.19 3.417 20.22 4.92 5.51  
0.500 3.68 2.000 9.19 3.500 20.22 5.00 5.51  
0.583 5.51 2.083 11.03 3.583 9.19 5.08 3.68  
0.667 5.51 2.167 11.03 3.667 9.19 5.17 3.68  
0.750 5.51 2.250 11.03 3.750 9.19 5.25 3.68  
0.833 5.51 2.333 11.03 3.833 9.19 5.33 3.68  
0.917 5.51 2.417 11.03 3.917 9.19 5.42 3.68  
1.000 5.51 2.500 11.03 4.000 9.19 5.50 3.68  
1.083 5.51 2.583 55.14 4.083 7.35 5.58 3.68  
1.167 5.51 2.667 55.14 4.167 7.35 5.67 3.68  
1.250 5.51 2.750 99.25 4.250 7.35 5.75 3.68  
1.333 5.51 2.833 99.25 4.333 7.35 5.83 3.68

0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 282.45  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.58 (ii) 8.31 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.13

\*TOTALS\*  
PEAK FLOW (cms)= 0.49 0.33 0.824 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 66.47 76.18  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.72 0.83

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 6242) Area (ha)= 0.89  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

Surface Area	(ha)=	0.69	0.20
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	77.03	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
over (min) 5.00 10.00  
Storage Coeff. (min)= 1.89 (ii) 6.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.14

\*TOTALS\*  
PEAK FLOW (cms)= 0.28 0.04 0.316 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 46.42 77.21  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.84

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0489)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 6102):	2.49	0.824	3.00	76.18
+ ID2= 2 ( 6162):	0.44	0.157	3.00	77.21
=====				
ID = 3 ( 0489):	2.93	0.980	3.00	76.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0489):	2.93	0.980	3.00	76.34
+ ID2= 2 ( 6242):	0.89	0.316	3.00	77.21
=====				
ID = 1 ( 0489):	3.82	1.296	3.00	76.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0490)  
IN= 2----> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1760	0.2330
0.0280	0.0927	0.0000	0.0000

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
INFLOW : ID= 2 ( 0489)	3.820	1.296	3.00	76.54
OUTFLOW: ID= 1 ( 0490)	3.820	0.143	3.58	76.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.04  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.2019

CALIB  
STANDHYD ( 6192) Area (ha)= 1.64  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area	(ha)=	1.07	0.57
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	104.56	40.00
Mannings n	=	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 103.33  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.27 (ii) 10.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.42 0.10 0.513 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 51.79 73.96  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.56 0.80

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0318)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0319):	5.42	0.343	3.08	76.28
+ ID2= 2 ( 0447):	15.05	0.551	3.58	66.52
=====				
ID = 3 ( 0318):	20.47	0.810	3.50	69.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0318):	20.47	0.810	3.50	69.10
+ ID2= 2 ( 0490):	3.82	0.143	3.58	76.32
=====				
ID = 1 ( 0318):	24.29	0.952	3.50	70.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0318):	24.29	0.952	3.50	70.24
+ ID2= 2 ( 6192):	1.64	0.513	3.00	73.96
=====				
ID = 3 ( 0318):	25.93	1.268	3.00	70.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0127):	29.73	1.770	3.00	42.45
+ ID2= 2 ( 0318):	25.93	1.268	3.00	70.47
=====				
ID = 3 ( 0128):	55.66	3.037	3.00	55.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	55.66	3.037	3.00	55.50
+ ID2= 2 ( 0603):	111.60	2.684	4.50	32.44
=====				
ID = 1 ( 0128):	167.26	4.327	4.33	40.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
IN= 2----> OUT= 1

Routing time step (min)'= 5.00

DATA FOR SECTION (1414.9)			
Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

TRAVEL TIME TABLE					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

hydrograph				pipe / channel		
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW: ID= 2 ( 0128)	167.26	4.33	4.33	40.12	2.26	0.09
OUTFLOW: ID= 1 ( 0604)	167.26	3.17	5.00	40.11	2.10	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6041)	1.70	79.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 4.12	

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)
0.083	3.68	1.583	9.19	3.083	20.22
0.167	3.68	1.667	9.19	3.167	20.22
0.250	3.68	1.750	9.19	3.250	20.22
0.333	3.68	1.833	9.19	3.333	20.22
0.417	3.68	1.917	9.19	3.417	20.22
0.500	3.68	2.000	9.19	3.500	20.22
0.583	5.51	2.083	11.03	3.583	9.19
0.667	5.51	2.167	11.03	3.667	9.19
0.750	5.51	2.250	11.03	3.750	9.19
0.833	5.51	2.333	11.03	3.833	9.19
0.917	5.51	2.417	11.03	3.917	9.19
1.000	5.51	2.500	11.03	4.000	9.19
1.083	5.51	2.583	55.14	4.083	7.35
1.167	5.51	2.667	55.14	4.167	7.35
1.250	5.51	2.750	99.25	4.250	7.35
1.333	5.51	2.833	99.25	4.333	7.35
1.417	5.51	2.917	143.36	4.417	7.35
1.500	5.51	3.000	143.36	4.500	7.35

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.028 (i)  
TIME TO PEAK (hrs)= 7.500  
RUNOFF VOLUME (mm)= 46.483  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.506

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

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6042)	22.30	53.00
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)	14.49	7.81	
Dep. Storage (mm)	6.00	8.00	
Average Slope (%)	1.00	1.00	
Length (m)	385.57	40.00	
Mannings n	0.013	0.250	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36  
over (min)= 5.00  
Storage Coeff. (min)= 4.97 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.22

PEAK FLOW (cms)= 4.48  
TIME TO PEAK (hrs)= 3.00  
RUNOFF VOLUME (mm)= 85.90  
TOTAL RAINFALL (mm)= 91.90  
RUNOFF COEFFICIENT = 0.93

\*TOTALS\*

6.101 (iii)  
3.00  
71.01  
91.90  
0.77



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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 0041):	1.70	0.028	7.50	46.48
+ ID2= 2 ( 0042):	22.30	6.101	3.00	71.01
ID = 3 ( 0129):	24.00	6.101	3.00	69.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0129):	24.00	6.101	3.00	69.27
+ ID2= 2 ( 0004):	167.26	3.168	5.00	40.11
ID = 3 ( 0130):	191.26	7.172	3.00	43.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)	ROUTING TIME STEP (min)'
IN= 2---> OUT= 1	5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100

CALIB	NASHYD ( 6111)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	Curve Number (CN)=	# of Linear Res. (N)=
1 + 2 = 3		0.60	8.00	1.08	77.0	3.00	
ID= 1 DT= 5.0 min							

252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

INFLOW : ID= 2 ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
191.26	7.17	3.00	43.77	1.07	0.36	
OUTFLOW: ID= 1 ( 0605)	191.26	3.46	5.08	43.77	0.92	0.30

CALIB	NASHYD ( 6111)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	Curve Number (CN)=	# of Linear Res. (N)=
1 + 2 = 3		0.60	8.00	1.08	77.0	3.00	
ID= 1 DT= 5.0 min							

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)= 0.027 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 44.055  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.479

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

CALIB	STANDHYD ( 6112)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
1 + 2 = 3		10.80	62.00	50.00
ID= 1 DT= 5.0 min				

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 6.70	4.10
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 268.33	40.00
Mannings n = 0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36  
 over (min)= 5.00  
 Storage Coeff. (min)= 4.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.24

\*TOTALS\*  
 PEAK FLOW (cms)= 2.09  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 85.90  
 TOTAL RAINFALL (mm)= 91.90  
 RUNOFF COEFFICIENT = 0.93

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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 ( 0137)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6111):	0.60	0.027	4.08	44.05
+ ID2= 2 ( 6112):	10.80	2.849	3.00	67.47

=====

ID = 3 ( 0137): 11.40 2.854 3.00 66.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0139)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0137):	11.40	2.854	3.00	66.24
+ ID2= 2 ( 0605):	191.26	3.455	5.08	43.77
=====				
ID = 3 ( 0139):	202.66	5.181	3.00	45.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6051)	0.40	66.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.31	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.012 (i)  
 TIME TO PEAK (hrs)= 4.417  
 RUNOFF VOLUME (mm)= 32.772  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.357

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

-----

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6052)	15.50	66.00	54.00
ID= 1 DT= 5.0 min			

-----

Surface Area (ha)	IMPERVIOUS (%)	PERVIOUS (i)
10.23	5.27	
Dep. Storage (mm)= 6.00	8.00	
Average Slope (%)= 1.00	1.00	
Length (m)= 321.46	40.00	
Mannings n = 0.013	0.250	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36 108.20  
 over (min) = 5.00 12.00  
 Storage Coeff. (min)= 4.46 (ii) 12.88 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.23 0.08

-----

PEAK FLOW (cms)	TIME TO PEAK (hrs)	RUNOFF VOLUME (mm)	TOTAL RAINFALL (mm)	RUNOFF COEFFICIENT
3.21	0.92	40.47	91.90	0.44
3.982 (iii)	3.00	65.00	91.90	0.71

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 06051):	0.40	0.012	4.42	32.77
+ ID2= 2 ( 6052):	15.50	3.982	3.00	65.00
=====				
ID = 3 ( 0131):	15.90	3.983	3.00	64.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0132)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0131):	15.90	3.983	3.00	64.19
+ ID2= 2 ( 0139):	202.66	5.181	3.00	45.03
=====				
ID = 3 ( 0132):	218.56	9.165	3.00	46.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ROUTE CHN( 0530)	Routing time step (min)
IN= 2--> OUT= 1	5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0132)	218.56	9.16	3.00	46.43	0.79	0.74
OUTFLOW: ID= 1 ( 0530)	218.56	7.14	3.08	46.43	0.71	0.71

CALIB  
STANDHYD ( 5302)  
ID= 1 DT= 5.0 min

Area (ha)= 5.80  
Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.48 2.32  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 196.64 40.00  
Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 101.50  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 3.32 (ii) 11.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 1.09 0.39 1.419 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 39.44 61.74  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.43 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530):	218.56	7.135	3.08	46.43
+ ID2= 2 ( 5302):	5.80	1.419	3.00	61.74
=====				
ID = 3 ( 0134):	224.36	7.994	3.00	46.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120):	274.04	13.087	3.00	50.58
+ ID2= 2 ( 0134):	224.36	7.994	3.00	46.82
=====				
ID = 3 ( 0135):	498.40	21.081	3.00	48.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900

76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700
85.82	76.28	0.0700
89.97	76.89	0.0700
91.35	77.38	0.0700 / 0.0900
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0135)	498.40	21.08	3.00	48.89	2.18	0.93
OUTFLOW: ID= 1 ( 0507)	498.40	17.40	3.25	48.89	2.02	0.88

CALIB  
NASHYD ( 5071)  
ID= 1 DT= 5.0 min

Area (ha)= 8.40 Curve Number (CN)= 74.0  
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.72

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.187

PEAK FLOW (cms)= 0.245 (i)  
TIME TO PEAK (hrs)= 4.917  
RUNOFF VOLUME (mm)= 40.655  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.442

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

CALIB  
STANDHYD ( 5072)  
ID= 1 DT= 5.0 min

Area (ha)= 40.50  
Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 18.23 22.28  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 519.62 40.00  
Mannings n = 0.013 0.250

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









28.58	0.18	59.83	0.48	91.08	0.42	122.33	0.18	153.58	0.11
28.67	0.18	59.92	0.47	91.17	0.42	122.42	0.18	153.67	0.11
28.75	0.18	60.00	0.47	91.25	0.42	122.50	0.18	153.75	0.11
28.83	0.18	60.08	0.47	91.33	0.41	122.58	0.18	153.83	0.11
28.92	0.18	60.17	0.46	91.42	0.41	122.67	0.18	153.92	0.11
29.00	0.18	60.25	0.46	91.50	0.41	122.75	0.18	154.00	0.11
29.08	0.18	60.33	0.45	91.58	0.41	122.83	0.18	154.08	0.11
29.17	0.18	60.42	0.45	91.67	0.41	122.92	0.18	154.17	0.11
29.25	0.17	60.50	0.44	91.75	0.41	123.00	0.18	154.25	0.11
29.33	0.17	60.58	0.44	91.83	0.40	123.08	0.18	154.33	0.11
29.42	0.17	60.67	0.44	91.92	0.40	123.17	0.18	154.42	0.11
29.50	0.17	60.75	0.43	92.00	0.40	123.25	0.18	154.50	0.11
29.58	0.17	60.83	0.43	92.08	0.40	123.33	0.18	154.58	0.11
29.67	0.17	60.92	0.42	92.17	0.40	123.42	0.18	154.67	0.11
29.75	0.17	61.00	0.42	92.25	0.39	123.50	0.18	154.75	0.11
29.83	0.17	61.08	0.42	92.33	0.39	123.58	0.18	154.83	0.11
29.92	0.16	61.17	0.42	92.42	0.39	123.67	0.18	154.92	0.11
30.00	0.16	61.25	0.41	92.50	0.39	123.75	0.18	155.00	0.11
30.08	0.16	61.33	0.41	92.58	0.38	123.83	0.18	155.08	0.11
30.17	0.16	61.42	0.40	92.67	0.38	123.92	0.18	155.17	0.11
30.25	0.16	61.50	0.40	92.75	0.38	124.00	0.18	155.25	0.11
30.33	0.16	61.58	0.40	92.83	0.38	124.08	0.18	155.33	0.11
30.42	0.16	61.67	0.40	92.92	0.38	124.17	0.18	155.42	0.11
30.50	0.16	61.75	0.39	93.00	0.37	124.25	0.18	155.50	0.11
30.58	0.16	61.83	0.39	93.08	0.37	124.33	0.19	155.58	0.11
30.67	0.16	61.92	0.39	93.17	0.37	124.42	0.19	155.67	0.11
30.75	0.16	62.00	0.38	93.25	0.37	124.50	0.19	155.75	0.11
30.83	0.15	62.08	0.38	93.33	0.37	124.58	0.19	155.83	0.10
30.92	0.15	62.17	0.38	93.42	0.37	124.67	0.20	155.92	0.11
31.00	0.15	62.25	0.38	93.50	0.37	124.75	0.20	156.00	0.10
31.08	0.15	62.33	0.39	93.58	0.37	124.83	0.20		
31.17	0.15	62.42	0.39	93.67	0.37	124.92	0.20		

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

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat  
 Output filename:  
 C:\Users\jannaormond\AppData\Local\Civica\XH5\860df144-956f-4cfc-88fc-f31f1a71e94a\77e6094b-e712-4929-aa89-8eb2e68c3ec7\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\XH5\860df144-956f-4cfc-88fc-f31f1a71e94a\77e6094b-e712-4929-aa89-8eb2e68c3ec7\  
 DATE: 04-10-2024 TIME: 01:34:39

USER:  
 COMMENTS:

\*\*\*\*\*  
 \*\* SIMULATION : SypII6.stm \*\*  
 \*\*\*\*\*

READ STORM Filename: C:\Users\jannaormond\AppData\Local\Temp\d550afd7-b542-4ce9-bff9-b1d2b7f65fd\d5e9b3f9  
 Ptotal= 56.50 mm Comments: Mount Hope-6 hour SCS Distribution Desig

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.26	1.50	5.65	3.00	12.43	4.50	3.39
0.17	2.26	1.67	5.65	3.17	12.43	4.67	3.39
0.33	2.26	1.83	5.65	3.33	12.43	4.83	3.39
0.50	3.39	2.00	6.78	3.50	5.65	5.00	2.26
0.67	3.39	2.17	6.78	3.67	5.65	5.17	2.26
0.83	3.39	2.33	6.78	3.83	5.65	5.33	2.26
1.00	3.39	2.50	33.90	4.00	4.52	5.50	2.26
1.17	3.39	2.67	61.02	4.17	4.52	5.67	2.26
1.33	3.39	2.83	88.14	4.33	4.52	5.83	2.26

V V I SSSSS U U A L (v 6.2.2018)  
 V V I SS U U A A L  
 V V I SS U U A A A A L  
 V V I SS U U A A L  
 W I SSSSS UUUUU A A LLLLL  
 000 TTTT TTTT H H Y Y M M 000 TM  
 O O T T H H Y Y M M O O  
 O O T T H H Y Y M M O O  
 000 T T H H Y Y M M 000  
 Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

CALIB  
 NASHYD ( 5011) Area (ha)= 80.20 Curve Number (CN)= 65.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.85

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 3.621  
 PEAK FLOW (cms)= 1.208 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 12.696  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.225

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

CALIB  
 STANDHYD ( 5012) Area (ha)= 37.32  
 ID= 1 DT= 5.0 min Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.18 23.14  
 Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00  
 Length (m)= 498.80 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 31.75  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 7.05 (ii) 20.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.17 0.05

PEAK FLOW (cms)= 1.98 1.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 50.50 15.46 23.87  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.27 0.42

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 5011): AREA QPEAK TPEAK R.V.
              (ha) (cms) (hrs) (mm)
+ ID2= 2 ( 5012): 80.20 1.208 3.92 12.70
                  37.32 2.505 3.00 23.87
-----
ID = 3 ( 0100): 117.52 2.734 3.00 16.24

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ROUTE CHN( 0502) |
| IN= 2--> OUT= 1 |
-----
Routing time step (min)= 5.00

```

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	
187.19	88.84	0.1100	
211.21	88.88	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.00
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46

Unit Hyd Qpeak (cms)= 1.220

```

PEAK FLOW (cms)= 0.175 (i)
TIME TO PEAK (hrs)= 3.000
RUNOFF VOLUME (mm)= 13.430
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.238

```

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

```

-----
| CALIB |
| NASHYD ( 5021) | Area (ha)= 3.67 Curve Number (CN)= 68.8
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.43 |
-----

```

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.328

```

PEAK FLOW (cms)= 0.102 (i)
TIME TO PEAK (hrs)= 3.333
RUNOFF VOLUME (mm)= 14.392
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.255

```

1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.849E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

```

-----
| CALIB |
| NASHYD ( 0502) | Area (ha)= 2.30 Curve Number (CN)= 69.3
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.07 |
-----

```

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

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

```

-----
| CALIB |
| STANDHYD ( 0575) | Area (ha)= 0.78
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
-----

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	0.27
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	72.11	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	31.87
over (min)	5.00	20.00
Storage Coeff. (min)=	2.21 (ii)	15.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.07

```

PEAK FLOW (cms)= 0.12 0.01 *TOTALS*
TIME TO PEAK (hrs)= 3.00 3.17 0.133 (iii)
RUNOFF VOLUME (mm)= 50.50 18.63 39.33

```

TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.33 0.70

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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 ( 5082) | Area (ha)= 0.71  
 ID= 1 DT= 5.0 min | Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.52 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 68.80 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.69

over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.15 (ii) 15.42 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.07  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.11 0.01 0.118 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 15.57 37.91  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.28 0.67

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.7 Ia = Dep. 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 ( 0568) | Area (ha)= 0.53  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 59.44 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	2.26	2.583	33.90	4.083	4.52	5.58	2.26
1.167	2.26	2.667	33.90	4.167	4.52	5.67	2.26
1.250	2.26	2.750	61.02	4.250	4.52	5.75	2.26
1.333	2.26	2.833	61.02	4.333	4.52	5.83	2.26
1.417	2.26	2.917	88.14	4.417	4.52	5.92	2.26
1.500	2.26	3.000	88.14	4.500	4.52	6.00	2.26

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 17.74  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.97 (ii) 19.32 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.08 0.01 0.088 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 12.49 37.18  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.22 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0510) | Area (ha)= 0.76  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.59 0.17  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 71.18 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 38.81  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.19 (ii) 14.88 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.14 0.01 0.154 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 22.36 44.30  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.40 0.78

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5092) | Area (ha)= 1.73  
 ID= 1 DT= 5.0 min | Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.88 0.85  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 107.39 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 38.81  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.80 (ii) 15.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.21 0.05 0.248 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 22.36 36.59  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.40 0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 0501) | Area (ha)= 6.23  
| ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00  
-----  
IMPERVIOUS PERVIOUS (i)

-----  
| CALIB |  
| STANDHYD ( 5282) | Area (ha)= 2.08  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
-----  
IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 39.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.96 (ii) 15.59 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.33 0.05 0.358 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 22.62 40.74  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.40 0.72

Surface Area (ha)= 2.62 3.61  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 203.80 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 14.37  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.12 (ii) 23.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.62 0.08 0.660 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 50.50 10.25 27.15  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.18 0.48

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 0481) |  
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0501): 6.23 0.660 3.00 27.15  
+ ID2= 2 ( 5021): 3.67 0.102 3.33 14.39  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0481) |  
| 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0481): 9.90 0.710 3.00 22.42  
+ ID2= 2 ( 5082): 0.71 0.118 3.00 37.91  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0481) |  
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0481): 10.61 0.828 3.00 23.46  
+ ID2= 2 ( 5092): 1.73 0.248 3.00 36.59  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0481) |  
| 3 + 2 = 1 | AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	12.34	1.076	3.00	25.30
+ ID2= 2 ( 0510):	0.76	0.154	3.00	44.30
-----				
ID = 1 ( 0481):	13.10	1.230	3.00	26.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	13.10	1.230	3.00	26.40
+ ID2= 2 ( 5282):	2.08	0.358	3.00	40.74
-----				
ID = 3 ( 0481):	15.18	1.588	3.00	28.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	15.18	1.588	3.00	28.37
+ ID2= 2 ( 0568):	0.53	0.088	3.00	37.18
-----				
ID = 1 ( 0481):	15.71	1.676	3.00	28.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	15.71	1.676	3.00	28.66
+ ID2= 2 ( 5691):	2.30	0.175	3.00	13.43
-----				
ID = 3 ( 0481):	18.01	1.851	3.00	26.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	18.01	1.851	3.00	26.72

+ ID2= 2 ( 0575):	0.78	0.133	3.00	39.33
-----				
ID = 1 ( 0481):	18.79	1.984	3.00	27.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 0524)			
ID= 1 DT= 5.0 min	Area (ha)	Curve Number (CN)	# of Linear Res. (N)
	7.22	80.7	3.00
	Ia (mm)= 8.00		
	U.H. Tp(hrs)= 0.20		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 0.534 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 21.458
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.380

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

| CALIB |

NASHYD ( 0522)			
ID= 1 DT= 5.0 min	Area (ha)	Curve Number (CN)	# of Linear Res. (N)
	3.31	63.1	3.00
	Ia (mm)= 8.00		
	U.H. Tp(hrs)= 0.16		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.143 (i)
TIME TO PEAK (hrs)= 3.083
RUNOFF VOLUME (mm)= 11.870
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.210

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

CALIB			
STANDHYD ( 0580)			
ID= 1 DT= 5.0 min	Area (ha)	Total Imp(%)	Dir. Conn.(%)
	1.87	65.00	65.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.22	0.65
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	111.65	40.00

Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 17.74
over (min) = 5.00 25.00
Storage Coeff. (min)= 2.87 (ii) 20.22 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.28 0.05

PEAK FLOW (cms)= 0.29 0.02 *TOTALS*
TIME TO PEAK (hrs)= 3.00 3.33 0.304 (iii)
RUNOFF VOLUME (mm)= 50.50 12.49 37.19
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.89 0.22 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |

STANDHYD ( 0519) | Area (ha)= 2.08  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.96 (ii) 20.67 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.28 0.05

PEAK FLOW (cms)= 0.33 0.02 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 0.337 (iii)  
 RUNOFF VOLUME (mm)= 50.50 11.92 36.99  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.65

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.84 (ii) 20.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.28 0.05

PEAK FLOW (cms)= 0.34 0.01 \*TOTALS\* 0.346 (iii)

TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 50.50 11.92 42.01  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0523) | Area (ha)= 6.61  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 86.10  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.19 (ii) 13.42 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 0.78 0.22 \*TOTALS\* 0.968 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 50.50 21.71 36.10  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.38 0.64

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

ADD HYD ( 0298)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0519): 2.08 0.337 3.00 36.99  
 + ID2= 2 ( 0529): 1.80 0.346 3.00 42.01  
 ID = 3 ( 0298): 3.88 0.683 3.00 39.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0298)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0298): 3.88 0.683 3.00 39.32  
 + ID2= 2 ( 0580): 1.87 0.304 3.00 37.19  
 ID = 1 ( 0298): 5.75 0.987 3.00 38.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0296)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0298): 5.75 0.987 3.00 38.63  
 + ID2= 2 ( 0522): 3.31 0.143 3.08 11.87  
 ID = 3 ( 0296): 9.06 1.129 3.00 28.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0291)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0296):	9.06	1.129	3.00	28.85
+ ID2= 2 ( 0523):	6.61	0.968	3.00	36.10
-----				
ID = 3 ( 0291):	15.67	2.097	3.00	31.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 0525)	1.45	
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	65.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.94	0.51
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	98.32	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 0527)	1.68	
ID= 1 DT= 5.0 min	Total Imp(%)= 76.00	52.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.28	0.40
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	105.83	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	126.57
over (min)	5.00	15.00
Storage Coeff. (min)=	2.78 (ii)	10.69 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.28	0.09
*TOTALS*		
PEAK FLOW (cms)=	0.21	0.09
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	50.50	32.10
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.57

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	31.33
over (min)	5.00	20.00
Storage Coeff. (min)=	2.66 (ii)	16.48 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.29	0.06
*TOTALS*		
PEAK FLOW (cms)=	0.23	0.02
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	50.50	18.34
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.32

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0304)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0291):	15.67	2.097	3.00	31.91
+ ID2= 2 ( 0525):	1.45	0.245	3.00	39.24
-----				
ID = 3 ( 0304):	17.12	2.343	3.00	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0295)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0304):	17.12	2.343	3.00	32.53
+ ID2= 2 ( 0524):	7.22	0.534	3.00	21.46
-----				
ID = 3 ( 0295):	24.34	2.823	3.00	29.25

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0301)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0295):	24.34	2.823	3.00	29.25
+ ID2= 2 ( 0527):	1.68	0.291	3.00	41.66
-----				
ID = 3 ( 0301):	26.02	3.114	3.00	30.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 0520)	2.27	
ID= 1 DT= 5.0 min	Total Imp(%)= 61.00	61.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.38	0.89
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	123.02	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26

0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 33.98  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.04 (ii) 16.42 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06

PEAK FLOW (cms)= 0.33 0.05 \*TOTALS\* 0.366 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 19.77 38.51  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.35 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0305)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0301):	26.02	3.114	3.00	30.05
+ ID2= 2 ( 0520):	2.27	0.366	3.00	38.51
ID = 3 ( 0305):	28.29	3.479	3.00	30.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0445)

IN= 2--> OUT= 1	OVERFLOW IS OFF			
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.1400	0.8343
	0.0195	0.2416	0.2360	1.0014
	0.0700	0.5564	0.3420	1.6616

Storage Coeff. (min)= 2.34 (ii) 15.69 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

PEAK FLOW (cms)= 0.18 0.01 \*TOTALS\* 0.186 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 19.85 43.75  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.35 0.77

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0310)

IN= 2--> OUT= 1	OVERFLOW IS OFF			
DT= 5.0 min	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0476	0.0432
	0.0096	0.0220	0.0579	0.0480
	0.0206	0.0306	0.0671	0.0528
	0.0297	0.0360	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0526)	0.940	0.186	3.00	43.75
OUTFLOW: ID= 1 ( 0310)	0.940	0.018	3.67	43.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.64  
TIME SHIFT OF PEAK FLOW (min)= 40.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0286

CALIB

STANDHYD ( 0574) Area (ha)= 1.44  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.12 0.32  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 97.98 40.00  
Mannings n = 0.013 0.250

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0305)	28.290	3.479	3.00	30.73
OUTFLOW: ID= 1 ( 0445)	28.290	0.118	6.00	30.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.39  
TIME SHIFT OF PEAK FLOW (min)=180.00  
MAXIMUM STORAGE USED (ha.m.)= 0.7475

CALIB  
STANDHYD ( 0526)  
ID= 1 DT= 5.0 min

Area (ha)= 0.94  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.73 0.21  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 79.16 40.00  
Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.13  
over (min) 5.00 20.00

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 26.59  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.65 (ii) 17.42 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.06

PEAK FLOW (cms)= 0.27 0.01 \*TOTALS\* 0.281 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 15.73 42.84  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.28 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0307)

IN= 2--> OUT= 1

OVERFLOW IS OFF

DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0730	0.0642
	0.0150	0.0327	0.0890	0.0712
	0.0310	0.0455	0.1030	0.0784
	0.0450	0.0536	0.0000	0.0000
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0574)	1.440	0.281	3.00	42.84
OUTFLOW: ID= 1 ( 0307)	1.440	0.027	3.58	42.46
PEAK FLOW REDUCTION [Qout/Qin](%)= 9.77				
TIME SHIFT OF PEAK FLOW (min)= 35.00				
MAXIMUM STORAGE USED (ha.m.)= 0.0427				

ADD HYD ( 0306)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0307):	1.44	0.027	3.58	42.46
+ ID2= 2 ( 0310):	0.94	0.018	3.67	43.14
=====				
ID = 3 ( 0306):	2.38	0.045	3.58	42.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 0571)	Area (ha)= 19.59	Total Imp(%)= 68.00	Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	13.32	6.27
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	361.39	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39

0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	47.88
over (min)	5.00	20.00
Storage Coeff. (min)=	5.81 (ii)	17.47 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.20	0.06
=====		
PEAK FLOW (cms)=	2.24	0.47
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	50.50	18.28
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.32
		0.61

\*TOTALS\*

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 63.6 Ia = Dep. 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 ( 0572)	Area (ha)= 11.31	Total Imp(%)= 71.00	Dir. Conn.(%)= 50.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	8.03	3.28
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	274.59	40.00
Mannings n	0.013	0.250

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

+ ID2= 2 ( 0572):	11.31	1.727	3.00	38.94
=====				
ID = 3 ( 0314):	30.90	4.279	3.00	36.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 0573)	Area (ha)= 2.66	Total Imp(%)= 60.00	Dir. Conn.(%)= 60.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.60	1.06
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	133.17	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	94.28
over (min)	5.00	15.00
Storage Coeff. (min)=	4.93 (ii)	13.82 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.22	0.08
=====		
PEAK FLOW (cms)=	1.32	0.49
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	50.50	27.37
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.48

\*TOTALS\*

- \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 76.1 Ia = Dep. 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 ( 0314)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0571):	19.59	2.552	3.00	34.39

Max.Eff.Inten.(mm/hr)=	88.14	29.87
over (min)	5.00	20.00
Storage Coeff. (min)=	3.19 (ii)	17.28 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.27	0.06
=====		
PEAK FLOW (cms)=	0.39	0.05
		0.417 (iii)

\*TOTALS\*



TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 17.54 37.31  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.31 0.66

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

- (i) CN PROCEDURE SELECTED FOR PREVIOUS LOSSES:  
 CN\* = 74.8 Ia = Dep. 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 ( 0317) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0314): 30.90 4.279 3.00 36.05
+ ID2= 2 ( 0573): 2.66 0.417 3.00 37.31
=====
ID = 3 ( 0317): 33.56 4.695 3.00 36.15
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| RESERVOIR( 0446) | OVERFLOW IS OFF
| IN= 2--> OUT= 1 |
| DT= 5.0 min |
-----
OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.2300 1.1312
0.0230 0.3704 | 0.2810 1.3850
0.0900 0.8066 | 0.4120 2.2335
  
```

```

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 0317) 33.560 4.695 3.00 36.15
OUTFLOW: ID= 1 ( 0446) 33.560 0.186 5.42 35.56
  
```

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.96  
 TIME SHIFT OF PEAK FLOW (min)=145.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.0295

```

| ADD HYD ( 0102) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
  
```

```

25.34 87.17 0.0900
68.44 87.04 0.0900
117.13 86.81 0.0900
125.36 85.21 0.0900 / 0.0700 Main Channel
127.36 84.21 0.0700 Main Channel
128.86 84.21 0.0700 Main Channel
130.86 85.21 0.0700 / 0.0900 Main Channel
131.88 86.36 0.0900
140.63 86.77 0.0900
168.26 86.90 0.0900
169.81 87.10 0.0900
202.11 87.50 0.0900
239.06 87.35 0.0900
270.29 87.83 0.0900
283.90 87.90 0.0900
297.51 87.86 0.0900
324.73 87.89 0.0900
351.95 87.78 0.0900
388.59 87.46 0.0900
  
```

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	200.54	3.23	3.00	22.84	1.01	0.90
OUTFLOW: ID= 1 ( 0503)	200.54	2.68	3.08	22.84	0.92	0.85

```

ID1= 1 ( 0306): 2.38 0.045 3.58 42.73
+ ID2= 2 ( 0445): 28.29 0.118 6.00 30.55
=====
ID = 3 ( 0102): 30.67 0.153 5.00 31.49
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0102) |
| 3 + 2 = 1 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0102): 30.67 0.153 5.00 31.49
+ ID2= 2 ( 0446): 33.56 0.186 5.42 35.56
=====
ID = 1 ( 0102): 64.23 0.338 5.17 33.62
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0102) |
| 1 + 2 = 3 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0102): 64.23 0.338 5.17 33.62
+ ID2= 2 ( 0481): 18.79 1.984 3.00 27.24
=====
ID = 3 ( 0102): 83.02 2.092 3.00 32.18
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0102) |
| 3 + 2 = 1 |
-----
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0102): 83.02 2.092 3.00 32.18
+ ID2= 2 ( 0502): 117.52 1.949 3.67 16.24
=====
ID = 1 ( 0102): 200.54 3.234 3.00 22.84
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0503) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00
  
```

```

<----- DATA FOR SECTION (1157.9) ----->
Distance Elevation Manning
0.00 86.78 0.0900
  
```

```

| CALIB |
| NASHYD ( 5031) | Area (ha)= 1.70 Curve Number (CN)= 71.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.82
  
```

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.079

PEAK FLOW (cms)= 0.032 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 15.449  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.273

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

```

| CALIB |
| STANDHYD ( 5032) | Area (ha)= 12.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00
  
```

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 7.20 5.00  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 285.19 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 42.47  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.04 (ii) 17.28 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 1.34 0.33  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 19.39  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

663.54 83.88 0.0900

<--- TRAVEL TIME TABLE --->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0104)	214.44	4.07	3.00	23.41	0.70	0.32
OUTFLOW: ID= 1 ( 0504)	214.44	3.00	3.50	23.41	0.66	0.31

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.89

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

ADD HYD ( 0103)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5031):	1.70	0.032	3.83	15.45
+ ID2= 2 ( 5032):	12.20	1.556	3.00	34.01
ID = 3 ( 0103):	13.90	1.562	3.00	31.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0103):	13.90	1.562	3.00	31.74
+ ID2= 2 ( 0503):	200.54	2.683	3.08	22.84
ID = 3 ( 0104):	214.44	4.073	3.00	23.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.013

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 13.992  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.248

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

CALIB

STANDHYD ( 5042) Area (ha)= 7.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.88 2.52  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 222.11 40.00  
 Mannings n = 0.013 0.250

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

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)= 88.14 42.02  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 4.34 (ii) 16.63 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 0.95 0.17 1.057 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 18.42 35.74  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.33 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0105)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5041):	0.30	0.005	3.92	13.99
+ ID2= 2 ( 5042):	7.40	1.057	3.00	35.74
=====				
ID = 3 ( 0105):	7.70	1.058	3.00	34.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

CALIB			
STANDHYD ( 5212)			
ID= 1 DT= 5.0 min			
	Area (ha)=	13.80	
	Total Imp(%)=	52.00	Dir. Conn.(%)= 40.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	7.18	6.62
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	303.32	40.00
Mannings n =	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)= 88.14 48.55  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 5.23 (ii) 16.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 1.28 0.51 1.624 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 22.65 33.79  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.40 0.60

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0105):	7.70	1.058	3.00	34.89
+ ID2= 2 ( 0504):	214.44	3.001	3.50	23.41
=====				
ID = 3 ( 0106):	222.14	3.306	3.17	23.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 5211)			
ID= 1 DT= 5.0 min			
	Area (ha)=	1.90	Curve Number (CN)= 77.0
	Ia (mm)=	8.00	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)=	0.95	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.040 (i)  
TIME TO PEAK (hrs)= 4.000  
RUNOFF VOLUME (mm)= 18.912  
TOTAL RAINFALL (mm)= 56.500  
RUNOFF COEFFICIENT = 0.335

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.040	4.00	18.91
+ ID2= 2 ( 5212):	13.80	1.624	3.00	33.79
=====				
ID = 3 ( 0112):	15.70	1.631	3.00	31.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0106):	222.14	3.306	3.17	23.81
+ ID2= 2 ( 0112):	15.70	1.631	3.00	31.99
=====				
ID = 3 ( 0114):	237.84	4.889	3.00	24.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)	
IN= 2--> OUT= 1	
	Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700 Main Channel

336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

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

INFLOW : ID=	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
2 ( 0114)	237.84	4.89	3.00	24.35	0.49	0.41
OUTFLOW: ID= 1 ( 0505)	237.84	4.36	3.08	24.35	0.46	0.39

CALIB	NASHYD ( 5051)	Area (ha)= 1.30	Curve Number (CN)= 68.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 0.62		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.027 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 13.998  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.248

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

CALIB	STANDHYD ( 5052)	Area (ha)= 14.60	Total Imp(%)= 66.00	Dir. Conn.(%)= 54.00
ID= 1 DT= 5.0 min				

Surface Area (ha)	IMPERVIOUS	PERVIOUS (i)
9.64	4.96	
Dep. Storage (mm)= 6.00	8.00	
Average Slope (%)= 1.00	1.00	
Length (m)= 311.98	40.00	
Mannings n = 0.013	0.250	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	42.02
over (min)	5.00	20.00
Storage Coeff. (min)=	5.32 (ii)	17.61 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.21	0.06
		*TOTALS*
PEAK FLOW (cms)=	1.82	0.32
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	50.50	18.42
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.33

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 5051):	1.30	0.027	3.58	14.00
+ ID2= 2 ( 5052):	14.60	2.038	3.00	35.74
ID = 3 ( 0107):	15.90	2.046	3.00	33.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0107):	15.90	2.046	3.00	33.96
+ ID2= 2 ( 0505):	237.84	4.359	3.08	24.35
ID = 3 ( 0108):	253.74	5.895	3.00	24.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)	Routing time step (min)'= 5.00
IN= 2----> OUT= 1	

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88

0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.239  
 PEAK FLOW (cms)= 0.090 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 15.450  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.273

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

		<--- hydrograph --->			<-pipe / channel->		
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0108)	253.74	5.89	3.00	24.95	1.32	1.17	
OUTFLOW: ID= 1 ( 0506)	253.74	5.59	3.08	24.95	1.30	1.16	

CALIB		Area (ha)= 7.80	
STANDHYD ( 5062)		Total Imp(%)= 65.00	
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 53.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	5.07	2.73
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	228.04	40.00
Mannings n	=	0.013	0.250

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

CALIB		Area (ha)= 3.90		Curve Number (CN)= 71.0	
NASHYD ( 5061)		Ia (mm)= 8.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 0.62			

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	45.50	
over (min)	5.00	20.00	
Storage Coeff. (min)	4.41 (ii)	16.31 (ii)	
Unit Hyd. Tpeak (min)	5.00	20.00	
Unit Hyd. peak (cms)	0.23	0.06	
*TOTALS*			
PEAK FLOW (cms)	0.98	0.20	1.110 (iii)
TIME TO PEAK (hrs)	3.00	3.17	3.00
RUNOFF VOLUME (mm)	50.50	19.99	36.16
TOTAL RAINFALL (mm)	56.50	56.50	56.50
RUNOFF COEFFICIENT	0.89	0.35	0.64

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0109)		AREA		QPEAK		TPEAK		R.V.	
1 + 2 = 3		(ha)		(cms)		(hrs)		(mm)	
ID1= 1 ( 5061):		3.90	0.090	3.58	15.45				
+ ID2= 2 ( 5062):		7.80	1.110	3.00	36.16				
ID = 3 ( 0109):		11.70	1.138	3.00	29.26				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)		AREA		QPEAK		TPEAK		R.V.	
1 + 2 = 3		(ha)		(cms)		(hrs)		(mm)	
ID1= 1 ( 0109):		11.70	1.138	3.00	29.26				
+ ID2= 2 ( 0506):		253.74	5.590	3.08	24.95				
ID = 3 ( 0110):		265.44	6.217	3.08	25.14				

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 0.80		Curve Number (CN)= 66.0	
NASHYD ( 5101)		Ia (mm)= 8.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min					

U.H. Tp(hrs)= 1.42

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.008 (i)  
 TIME TO PEAK (hrs)= 4.667  
 RUNOFF VOLUME (mm)= 13.112  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.232

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

CALIB		Area (ha)= 0.90	
STANDHYD ( 5102)		Total Imp(%)= 50.00	
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 35.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.45	0.45
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	77.46	40.00
Mannings n	=	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 36.65  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.31 (ii) 15.29 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.08 0.03 0.095 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 16.79 28.58  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.30 0.51

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

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)  
 1 + 2 = 3

AREA QPEAK TPEAK R.V.

INFLOW : ID= 2 ( 0115) (ha) (cms) (hrs) (mm) (m) (m/s)  
 1.70 0.10 3.00 21.30 0.02 0.24  
 OUTFLOW : ID= 1 ( 0511) 1.70 0.07 3.08 21.30 0.01 0.24

CALIB  
 NASHYD ( 5111) Area (ha)= 1.90 Curve Number (CN)= 67.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.56

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.129  
 PEAK FLOW (cms)= 0.041 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 13.548  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.240

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

----- (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5101): 0.80 0.008 4.67 13.11  
 + ID2= 2 ( 5102): 0.90 0.095 3.00 28.58  
 -----  
 ID = 3 ( 0115): 1.70 0.096 3.00 21.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511) |  
 IN= 2---> OUT= 1 | Routing time step (min)= 5.00

----- DATA FOR SECTION ( 553.6) -----			
Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 /0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 /0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

CALIB  
 STANDHYD ( 5112) Area (ha)= 1.10  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.55 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 85.63 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 42.91  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.45 (ii) 14.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.09 0.04 0.127 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 19.48 30.33  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34 0.54

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0116)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5111):	1.90	0.041	3.58	13.55
+ ID2= 2 ( 5112):	1.10	0.127	3.00	30.33
=====				
ID = 3 ( 0116):	3.00	0.142	3.00	19.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0116):	3.00	0.142	3.00	19.70
+ ID2= 2 ( 0511):	1.70	0.068	3.00	21.30
=====				
ID = 3 ( 0117):	4.70	0.210	3.00	20.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
IN= 2--> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->  
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME

0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.010 (i)  
TIME TO PEAK (hrs)= 4.250  
RUNOFF VOLUME (mm)= 15.447  
TOTAL RAINFALL (mm)= 56.500  
RUNOFF COEFFICIENT = 0.273

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

CALIB  
STANDHYD ( 5122) Area (ha)= 3.20  
ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.92	1.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	146.06	40.00
Mannings n =	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26

(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0117)	4.70	0.21	3.00	20.28	0.45	0.32
OUTFLOW: ID= 1 ( 0512)	4.70	0.11	3.33	20.27	0.35	0.27

CALIB  
NASHYD ( 5121) Area (ha)= 0.70 Curve Number (CN)= 71.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
U.H. Tp(hrs)= 1.14

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26

0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 44.41  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.37 (ii) 15.39 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.07

PEAK FLOW (cms)= 0.36 0.09 0.425 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 19.78 34.21  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.35 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5121):	0.70	0.010	4.25	15.45
+ ID2= 2 ( 5122):	3.20	0.425	3.00	34.21
=====				
ID = 3 ( 0118):	3.90	0.427	3.00	30.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0118):	3.90	0.427	3.00	30.84
+ ID2= 2 ( 0512):	4.70	0.115	3.33	20.27
=====				

ID = 3 ( 0119): 8.60 0.513 3.00 25.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0110):	265.44	6.217	3.08	25.14
+ ID2= 2 ( 0119):	8.60	0.513	3.00	25.07
ID = 3 ( 0120):	274.04	6.596	3.00	25.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6011)	44.10	62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.83	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.608 (i)

TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 11.521  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.204

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

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6012)	11.00	16.00
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	3.08	7.92
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	270.80	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 26.15  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.88 (ii) 19.74 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.41 0.30 0.600 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 13.46 19.39  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.24 0.34

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6011):	44.10	0.608	3.92	11.52
+ ID2= 2 ( 6012):	11.00	0.600	3.00	19.39
ID = 3 ( 0124):	55.10	0.784	3.50	13.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6021)	43.60	62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.95	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26

0.750 3.39 | 2.250 6.78 | 3.750 5.65 | 5.25 2.26  
 0.833 3.39 | 2.333 6.78 | 3.833 5.65 | 5.33 2.26  
 0.917 3.39 | 2.417 6.78 | 3.917 5.65 | 5.42 2.26  
 1.000 3.39 | 2.500 6.78 | 4.000 5.65 | 5.50 2.26  
 1.083 3.39 | 2.583 33.90 | 4.083 4.52 | 5.58 2.26  
 1.167 3.39 | 2.667 33.90 | 4.167 4.52 | 5.67 2.26  
 1.250 3.39 | 2.750 61.02 | 4.250 4.52 | 5.75 2.26  
 1.333 3.39 | 2.833 61.02 | 4.333 4.52 | 5.83 2.26  
 1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
 1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.545 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 11.521  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.204

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

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6022)	12.90	23.00
ID= 1 DT= 5.0 min	Total Imp(%)= 35.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	4.51	8.38
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	293.26	40.00
Mannings n	0.013	0.250

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

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26



0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 26.96  
over (min) 5.00 20.00  
Storage Coeff. (min)= 5.12 (ii) 19.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 0.69 0.33 0.896 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 13.66 22.13  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.24 0.39

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0125 )				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0021):	43.60	0.545	4.00	11.52
+ ID2= 2 ( 0022):	12.90	0.896	3.00	22.13
-----				
ID = 3 ( 0125):	56.50	0.981	3.00	13.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126 )				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	0.784	3.50	13.09
+ ID2= 2 ( 0125):	56.50	0.981	3.00	13.94
-----				
ID = 3 ( 0126):	111.60	1.699	3.00	13.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603 )  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION (2135.9) ----->			
Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

TRAVEL TIME TABLE ----->						
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)	
0.12	89.71	.358E+02	0.0	0.19	81.29	
0.25	89.84	.143E+03	0.0	0.30	51.21	
0.37	89.96	.689E+03	0.2	0.23	67.44	
0.50	90.09	.278E+04	0.6	0.20	77.83	
0.67	90.26	.132E+05	3.4	0.23	65.31	
0.83	90.42	.262E+05	9.3	0.33	46.76	
1.00	90.59	.403E+05	17.9	0.41	37.64	
1.17	90.76	.556E+05	28.8	0.48	32.17	
1.33	90.92	.721E+05	42.0	0.53	28.63	
1.50	91.09	.903E+05	57.1	0.58	26.37	
1.67	91.26	.110E+06	74.7	0.62	24.65	
1.83	91.42	.133E+06	93.4	0.64	23.71	
2.00	91.59	.159E+06	113.6	0.66	23.26	
2.17	91.76	.188E+06	136.6	0.67	22.96	
2.33	91.92	.222E+06	168.5	0.70	21.97	
2.50	92.09	.258E+06	211.3	0.75	20.33	
2.67	92.26	.294E+06	258.5	0.81	18.98	

2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ----> <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0126 ) 111.60 1.70 3.00 13.52 0.57 0.21  
OUTFLOW: ID= 1 ( 0603 ) 111.60 1.06 4.67 13.52 0.53 0.20

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

CALIB		IMPERVIOUS		PERVIOUS (i)	
STANDHYD ( 6032 )	Area (ha)= 10.73				
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00				Dir. Conn.(%)= 15.00
Surface Area (ha)=	3.00				7.73
Dep. Storage (mm)=	6.00				8.00
Average Slope (%)=	1.00				1.00
Length (m)=	267.46				40.00
Mannings n =	0.013				0.250

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

CALIB		Curve Number (CN)= 72.0	
NASHYD ( 6031 )	Area (ha)= 19.00		
ID= 1 DT= 5.0 min	Ia (mm)= 8.00		# of Linear Res.(N)= 3.00
U.H. Tp(hrs)=	1.32		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.550  
PEAK FLOW (cms)= 0.261 (i)  
TIME TO PEAK (hrs)= 4.500  
RUNOFF VOLUME (mm)= 15.971  
TOTAL RAINFALL (mm)= 56.500  
RUNOFF COEFFICIENT = 0.283

Max.Eff.Inten.(mm/hr)= 88.14 37.12  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.85 (ii) 17.76 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 0.38 0.44 0.664 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 18.53 23.33

TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.33 0.41

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0127)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0031):	19.00	0.261	4.50	15.97
+ ID2= 2 ( 0032):	10.73	0.664	3.00	23.33
ID = 3 ( 0127):	29.73	0.688	3.00	18.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6131)	1.77	66.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 21.42  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.94 (ii) 19.03 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.38 0.02 0.392 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 14.88 42.66  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.26 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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)	Dir. Conn.(%)
STANDHYD ( 6142)	1.50	
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.04	0.47
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	100.00	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

1.083 3.39 | 2.583 33.90 | 4.083 4.52 | 5.58 2.26  
 1.167 3.39 | 2.667 33.90 | 4.167 4.52 | 5.67 2.26  
 1.250 3.39 | 2.750 61.02 | 4.250 4.52 | 5.75 2.26  
 1.333 3.39 | 2.833 61.02 | 4.333 4.52 | 5.83 2.26  
 1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
 1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.070 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 13.099  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.232

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

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6222)	2.02	
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.58	0.44
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	116.05	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 49.89  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.69 (ii) 14.16 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.18 0.04 0.216 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 18.47 34.48  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.33 0.61

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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)	Dir. Conn.(%)
STANDHYD ( 6152)	2.14	
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	1.67	0.47
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	119.44	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 21.42  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.99 (ii) 19.08 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.40 0.02 0.415 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 14.88 42.66  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.26 0.76

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 6182)	
ID= 1 DT= 5.0 min		Area (ha)= 1.49	Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.16	0.33	
Dep. Storage (mm)=	6.00	8.00	

CALIB		STANDHYD ( 6302)	
ID= 1 DT= 5.0 min		Area (ha)= 0.86	Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.81	0.05	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	75.72	40.00	
Mannings n =	0.013	0.250	

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 24.07  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.27 (ii) 5.31 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.16

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.00 0.200 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 50.50 11.92 48.18  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.21 0.85

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

Average Slope (%)= 1.00 1.00  
Length (m)= 99.67 40.00  
Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 106.27  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.68 (ii) 11.16 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.18 0.06 0.231 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 50.50 23.69 37.09  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.42 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6172)	
ID= 1 DT= 5.0 min		Area (ha)= 2.31	Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00
		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.80	0.51	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	124.10	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 123.95  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.06 (ii) 11.03 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.09

\*TOTALS\*

PEAK FLOW (cms)=	0.28	0.11	0.372 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	50.50	27.66	39.08
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.49	0.69

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0342)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6142):	1.50	0.216	3.00	34.48
+ ID2= 2 ( 6152):	2.14	0.415	3.00	42.66
=====				
ID = 3 ( 0342):	3.64	0.631	3.00	39.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0342):	3.64	0.631	3.00	39.29
+ ID2= 2 ( 6172):	2.31	0.372	3.00	39.08
=====				
ID = 1 ( 0342):	5.95	1.003	3.00	39.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	5.95	1.003	3.00	39.21
+ ID2= 2 ( 6182):	1.49	0.231	3.00	37.09
=====				
ID = 3 ( 0342):	7.44	1.234	3.00	38.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0342):	7.44	1.234	3.00	38.78
+ ID2= 2 ( 6222):	2.02	0.392	3.00	42.66
=====				
ID = 1 ( 0342):	9.46	1.626	3.00	39.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0342)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0342):	9.46	1.626	3.00	39.61
+ ID2= 2 ( 6302):	0.86	0.200	3.00	48.18
=====				
ID = 3 ( 0342):	10.32	1.826	3.00	40.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 6212)			
ID= 1 DT= 5.0 min			
Area (ha)=	1.15		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
-----			
Surface Area (ha)=	0.75	IMPERVIOUS	PERVIOUS (i)
Dep. Storage (mm)=	6.00	8.00	8.00
Average Slope (%)=	1.00	1.00	
Length (m)=	87.56	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	16.86
over (min)	5.00	25.00
Storage Coeff. (min)=	2.48 (ii)	20.19 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.29	0.05

*TOTALS*			
PEAK FLOW (cms)=	0.18	0.01	0.187 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	50.50	11.92	36.99
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.21	0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6232)			
ID= 1 DT= 5.0 min			
Area (ha)=	0.85		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00
-----			
Surface Area (ha)=	0.55	IMPERVIOUS	PERVIOUS (i)
Dep. Storage (mm)=	6.00	8.00	8.00
Average Slope (%)=	1.00	1.00	
Length (m)=	75.28	40.00	
Mannings n =	0.013	0.250	

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	16.86
over (min)	5.00	20.00
Storage Coeff. (min)=	2.27 (ii)	19.98 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.30	0.06

*TOTALS*			
PEAK FLOW (cms)=	0.13	0.01	0.140 (iii)
TIME TO PEAK (hrs)=	3.00	3.25	3.00
RUNOFF VOLUME (mm)=	50.50	11.92	36.98
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.21	0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0488)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6212):	1.15	0.187	3.00	36.99
+ ID2= 2 ( 6232):	0.85	0.140	3.00	36.98
=====				

ID = 3 ( 0488): 2.00 0.327 3.00 36.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 6262) Area (ha)= 0.96 Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00 ID= 1 DT= 5.0 min

IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 0.58 0.38 Dep. Storage (mm)= 6.00 8.00 Average Slope (%)= 1.00 1.00 Length (m)= 80.00 40.00 Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall data from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 88.14 over (min)= 5.00 Storage Coeff. (min)= 2.35 (ii) Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= 0.30

PEAK FLOW (cms)= 0.14 TIME TO PEAK (hrs)= 3.00 RUNOFF VOLUME (mm)= 50.50 \*TOTALS\* 0.02 0.155 (iii) 3.00 38.38

TOTAL RAINFALL (mm)= 56.50 56.50 56.50 RUNOFF COEFFICIENT = 0.89 0.36 0.68

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 78.9 Ia = Dep. 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 ( 0346) 1 + 2 = 3 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) ID1= 1 ( 0342): 10.32 1.826 3.00 40.32 + ID2= 2 ( 0488): 2.00 0.327 3.00 36.98 ID = 3 ( 0346): 12.32 2.153 3.00 39.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346) 3 + 2 = 1 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) ID1= 3 ( 0346): 12.32 2.153 3.00 39.78 + ID2= 2 ( 6131): 1.77 0.070 3.08 13.10 ID = 1 ( 0346): 14.09 2.212 3.00 36.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0346) 1 + 2 = 3 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) ID1= 1 ( 0346): 14.09 2.212 3.00 36.43 + ID2= 2 ( 6262): 0.96 0.155 3.00 38.38 ID = 3 ( 0346): 15.05 2.366 3.00 36.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0447) OVERFLOW IS OFF

IN= 2---> OUT= 1 DT= 5.0 min OUTFLOW (cms) STORAGE (ha.m.) OUTFLOW (cms) STORAGE (ha.m.) 0.0000 0.0000 0.1070 0.3146 0.0150 0.1715 0.7100 0.8031

INFLOW : ID= 2 ( 0346) 15.050 2.366 3.00 36.56 OUTFLOW: ID= 1 ( 0447) 15.050 0.207 4.00 36.36

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.76 TIME SHIFT OF PEAK FLOW (min)= 60.00 MAXIMUM STORAGE USED (ha.m.)= 0.3959

CALIB STANDHYD ( 6202) Area (ha)= 1.26 Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00 ID= 1 DT= 5.0 min

IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.18 0.08 Dep. Storage (mm)= 6.00 8.00 Average Slope (%)= 1.00 1.00 Length (m)= 91.65 40.00 Mannings n = 0.013 0.250

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

TRANSFORMED HYETOGRAPH

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall data from 0.083 to 1.333 hours.

1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26 1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Max. Eff. Inten. (mm/hr)= 88.14 over (min)= 5.00 Storage Coeff. (min)= 2.55 (ii) Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= 0.29

PEAK FLOW (cms)= 0.29 TIME TO PEAK (hrs)= 3.00 RUNOFF VOLUME (mm)= 50.50 TOTAL RAINFALL (mm)= 56.50 RUNOFF COEFFICIENT = 0.89

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 63.0 Ia = Dep. Storage (Above) (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT. (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0491) OVERFLOW IS OFF IN= 2---> OUT= 1 DT= 5.0 min OUTFLOW (cms) STORAGE (ha.m.) OUTFLOW (cms) STORAGE (ha.m.) 0.0000 0.0000 0.0580 0.0848 0.0090 0.0366 0.0000 0.0000

INFLOW : ID= 2 ( 6202) 1.260 0.292 3.00 48.18 OUTFLOW: ID= 1 ( 0491) 1.260 0.018 4.00 47.37

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.32 TIME SHIFT OF PEAK FLOW (min)= 60.00 MAXIMUM STORAGE USED (ha.m.)= 0.0459

CALIB STANDHYD ( 6062) Area (ha)= 1.98 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00 ID= 1 DT= 5.0 min

IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 1.29 0.69 Dep. Storage (mm)= 6.00 8.00

Average Slope (%) = 1.00 1.00  
 Length (m) = 114.89 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.92 (ii) 20.63 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.28 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.31 0.02 0.321 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 50.50 11.92 36.99  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.65

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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  
 | STANHYD ( 6122) | Area (ha)= 2.18  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.05 0.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 120.55 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 24.07  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 3.01 (ii) 6.05 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.28 0.15

\*TOTALS\*  
 PEAK FLOW (cms)= 0.50 0.01 0.503 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 50.50 11.92 48.18  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.85

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHW( 0319)  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

----- hydrograph ----- <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0493) 5.42 0.34 3.00 43.72 0.18 0.60  
 OUTFLOW: ID= 1 ( 0319) 5.42 0.16 3.08 43.71 0.12 0.48

RESERVOIR( 1000) OVERFLOW IS OFF  
 | IN= 2----> OUT= 1 |  
 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.180	0.503	3.00	48.18
2.180	0.032	4.00	47.72

INFLOW : ID= 2 ( 6122)  
 OUTFLOW: ID= 1 ( 1000)

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.41  
 TIME SHIFT OF PEAK FLOW (min)= 60.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0793

ADD HYD ( 0493)  
 | 1 + 2 = 3 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 1000):	2.18	0.032	4.00	47.72
+ ID2= 2 ( 0491):	1.26	0.018	4.00	47.37
=====				
ID = 3 ( 0493):	3.44	0.051	4.00	47.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0493)  
 | 3 + 2 = 1 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0493):	3.44	0.051	4.00	47.59
+ ID2= 2 ( 0062):	1.98	0.321	3.00	36.99
=====				
ID = 1 ( 0493):	5.42	0.345	3.00	43.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 6162)  
ID= 1 DT= 5.0 min

Area (ha)= 0.44  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.10  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 54.16 40.00  
Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.84  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 1.86 (ii) 15.11 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

PEAK FLOW (cms)= 0.08 0.01 0.088 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 20.24 43.82  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.36 0.78

\*TOTALS\*  
0.432 (iii)

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

PEAK FLOW (cms)= 0.30 0.15 0.432 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 50.50 34.18 42.34  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.60 0.75

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 6242)  
ID= 1 DT= 5.0 min

Area (ha)= 0.89  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.69 0.20  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 77.03 40.00  
Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102)  
ID= 1 DT= 5.0 min

Area (ha)= 2.49  
Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.94 0.55  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 128.84 40.00  
Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 151.56  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.13 (ii) 10.49 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.09

1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.84  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.30 (ii) 15.55 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

PEAK FLOW (cms)= 0.17 0.01 0.177 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 20.24 43.83  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.36 0.78

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0489)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6102):	2.49	0.432	3.00	42.34
+ ID2= 2 ( 6162):	0.44	0.088	3.00	43.82
=====				
ID = 3 ( 0489):	2.93	0.519	3.00	42.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0489)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0489):	2.93	0.519	3.00	42.56
+ ID2= 2 ( 6242):	0.89	0.177	3.00	43.83
=====				
ID = 1 ( 0489):	3.82	0.696	3.00	42.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0490) OVERFLOW IS OFF

IN= 2---> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1760	0.2330
0.0280	0.0927	0.0000	0.0000

INFLOW : ID= 2 ( 0489)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	3.820	0.696	3.00	42.86
OUTFLOW: ID= 1 ( 0490)	3.820	0.056	4.00	42.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.07  
 TIME SHIFT OF PEAK FLOW (min)= 60.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1195

CALIB  
 STANDHYD ( 6192)  
 ID= 1 DT= 5.0 min

Area (ha)	Total Imp(%)	Dir. Conn.(%)
1.64	65.00	65.00

IMPERVIOUS (ha)	PERVIOUS (i)
1.07	0.57
6.00	8.00
1.00	1.00
104.56	40.00
0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26

1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26
Max.Eff.Inten.(mm/hr)=		88.14		40.77			
over (min)		5.00		20.00			
Storage Coeff. (min)=		2.76 (ii)		15.20 (ii)			
Unit Hyd. Tpeak (min)=		5.00		20.00			
Unit Hyd. peak (cms)=		0.28		0.07			
PEAK FLOW (cms)=		0.26		0.04		0.285 (iii)	
TIME TO PEAK (hrs)=		3.00		3.17		3.00	
RUNOFF VOLUME (mm)=		50.50		23.40		41.01	
TOTAL RAINFALL (mm)=		56.50		56.50		56.50	
RUNOFF COEFFICIENT =		0.89		0.41		0.73	

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0318)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0319):	5.42	0.162	3.08	43.71
+ ID2= 2 ( 0447):	15.05	0.207	4.00	36.36
=====				
ID = 3 ( 0318):	20.47	0.324	3.58	38.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)  
 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0318):	20.47	0.324	3.58	38.31
+ ID2= 2 ( 0490):	3.82	0.056	4.00	42.64
=====				
ID = 1 ( 0318):	24.29	0.378	3.58	38.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0318)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0318):	24.29	0.378	3.58	38.99
+ ID2= 2 ( 6192):	1.64	0.285	3.00	41.01
=====				
ID = 3 ( 0318):	25.93	0.542	3.00	39.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0127):	29.73	0.688	3.00	18.63
+ ID2= 2 ( 0318):	25.93	0.542	3.00	39.12
=====				
ID = 3 ( 0128):	55.66	1.231	3.00	28.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	55.66	1.231	3.00	28.17
+ ID2= 2 ( 0603):	111.60	1.061	4.67	13.52
=====				
ID = 1 ( 0128):	167.26	1.773	4.50	18.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
 IN= 2---> OUT= 1

Routing time step (min)= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

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

INFLOW : ID= 2 ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
	167.26	1.77	4.50	18.39	1.80	0.09
OUTFLOW: ID= 1 ( 0604)	167.26	1.29	5.00	18.39	1.70	0.09

\*\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
 NASHYD ( 6041)  
 ID= 1 DT= 5.0 min

Area (ha)	Ia (mm)	U.H. Tp(hrs)	Curve Number (CN)	# of Linear Res. (N)
1.70	8.00	4.12	79.0	3.00



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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.016

PEAK FLOW (cms) = 0.012 (i)  
 TIME TO PEAK (hrs) = 7.583  
 RUNOFF VOLUME (mm) = 20.270  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.359

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

CALIB  
 STANDHYD ( 6042) Area (ha) = 22.30  
 ID= 1 DT= 5.0 min Total Imp(%) = 65.00 Dir. Conn.(%) = 53.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	14.49	7.81
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	385.57	40.00
Mannings n	0.013	0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 58.52  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 6.04 (ii) 16.80 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.19 0.06

PEAK FLOW (cms) = 2.69 0.73 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.17 3.00  
 RUNOFF VOLUME (mm) = 50.50 25.34 38.67  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.45 0.68

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 6041):	1.70	0.012	7.58	20.27
+ ID2= 2 ( 6042):	22.30	3.189	3.00	38.67

ID = 3 ( 0129): 24.00 3.189 3.00 37.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0129):	24.00	3.189	3.00	37.37
+ ID2= 2 ( 0604):	167.26	1.292	5.00	18.39
ID = 3 ( 0130):	191.26	3.628	3.00	20.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 801.4) ----->			
Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.03	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

<----- TRAVEL TIME TABLE ----->					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel->  
 INFLOW : ID= 2 ( 0130) 191.26 3.63 3.00 20.77 0.93 0.30  
 OUTFLOW: ID= 1 ( 0605) 191.26 1.47 5.00 20.77 0.78 0.25

CALIB  
 NASHYD ( 6111) Area (ha) = 0.60 Curve Number (CN) = 77.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.08

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.021

PEAK FLOW (cms) = 0.011 (i)  
 TIME TO PEAK (hrs) = 4.167  
 RUNOFF VOLUME (mm) = 18.909  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.335

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

CALIB  
 STANDHYD ( 6112) Area (ha) = 10.80  
 ID= 1 DT= 5.0 min Total Imp(%) = 62.00 Dir. Conn.(%) = 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 6.70 4.10  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 268.33 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 49.77  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 4.86 (ii) 16.34 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.22 0.06

PEAK FLOW (cms) = 1.26 0.33 \*TOTALS\* 1.486 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.17 3.00  
 RUNOFF VOLUME (mm) = 50.50 22.15 36.32  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.39 0.64

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0137)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6111): 0.60 0.011 4.17 18.91  
 + ID2= 2 ( 6112): 10.80 1.486 3.00 36.32  
 ID = 3 ( 0137): 11.40 1.487 3.00 35.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0137): 11.40 1.487 3.00 35.41  
 + ID2= 2 ( 0605): 191.26 1.473 5.00 20.77  
 ID = 3 ( 0139): 202.66 2.556 3.00 21.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6051) Area (ha) = 0.40 Curve Number (CN) = 66.0  
 ID= 1 DT= 5.0 min Ua (mm) = 8.00 # of Linear Res. (N) = 3.00  
 U.H. Tp (hrs) = 1.31

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.012

PEAK FLOW (cms) = 0.005 (i)  
 TIME TO PEAK (hrs) = 4.500  
 RUNOFF VOLUME (mm) = 13.108  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.232

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

CALIB  
 STANDHYD ( 6052) Area (ha) = 15.50  
 ID= 1 DT= 5.0 min Total Imp(%) = 66.00 Dir. Conn.(%) = 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 10.23 5.27  
 Dep. Storage (mm) = 6.00 8.00

Average Slope (%) = 1.00 1.00  
 Length (m) = 321.46 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 39.50  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 5.41 (ii) 18.01 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.20 0.06

PEAK FLOW (cms) = 1.93 0.32 \*TOTALS\* 2.141 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.25 3.00  
 RUNOFF VOLUME (mm) = 50.50 17.37 35.26  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.31 0.62

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0051):	0.40	0.005	4.50	13.11
+ ID2= 2 ( 0052):	15.50	2.141	3.00	35.26
=====				
ID = 3 ( 0131):	15.90	2.141	3.00	34.70

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 ( 0131):	15.90	2.141	3.00	34.70
+ ID2= 2 ( 0139):	202.66	2.556	3.00	21.59
=====				
ID = 3 ( 0132):	218.56	4.698	3.00	22.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

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

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.56	4.70	3.00	22.55	0.59	0.65
OUTFLOW : ID= 1 ( 0530)	218.56	3.52	3.08	22.55	0.52	0.57

CALIB		STANDHYD ( 5302)	
Area (ha)=	5.80	Total Imp(%)=	60.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	48.00

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	3.48	2.32
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	196.64	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
-------------	---------------	-------------	---------------	-------------	---------------	-------------	---------------

---- TRANSFORMED HYETOGRAPH ----

0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	36.65
over (min)	5.00	20.00
Storage Coeff. (min)=	4.03 (ii)	17.01 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.24	0.06
*TOTALS*		
PEAK FLOW (cms)=	0.66	0.13
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	50.50	16.79
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.30

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530):	218.56	3.524	3.08	22.55
+ ID2= 2 ( 5302):	5.80	0.750	3.00	32.97
=====				
ID = 3 ( 0134):	224.36	4.025	3.00	22.82

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37

1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.187

PEAK FLOW (cms)= 0.101 (i)  
 TIME TO PEAK (hrs)= 5.000  
 RUNOFF VOLUME (mm)= 17.077  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.302

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

INFLow: ID= 2 ( 0135)		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
OUTFLOW: ID= 1 ( 0507)		498.40	10.62	3.00	24.09	1.65	0.78
		498.40	8.10	3.33	24.09	1.48	0.73

CALIB	STANDHYD ( 5072)	Area (ha)= 40.50
ID= 1 DT= 5.0 min		Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

Surface Area (ha)=	18.23	PERVIOUS (i)	22.28
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	519.62		40.00
Mannings n	=	0.013	0.250

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

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

CALIB	NASHYD ( 5071)	Area (ha)= 8.40	Curve Number (CN)= 74.0
ID= 1 DT= 5.0 min		Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 1.72	

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26

1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26
-------	------	-------	-------	-------	------	------	------

Max.Eff.Inten.(mm/hr)= 88.14 45.45  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 7.22 (ii) 19.13 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.17 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.67 1.51 3.672 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 20.95 29.82  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.37 0.53

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 74.0 Ia = Dep. 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 ( 0121)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5071):	8.40	0.101	5.00	17.08
+ ID2= 2 ( 5072):	40.50	3.672	3.00	29.82
ID = 3 ( 0121):	48.90	3.677	3.00	27.63

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 ( 0121):	48.90	3.677	3.00	27.63
+ ID2= 2 ( 0507):	498.40	8.103	3.33	24.09
ID = 3 ( 0122):	547.30	10.278	3.25	24.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

STORE HYD( 1505)	AREA (ha)= 253.60
ID= 1 DT= 5.0min	QPEAK (cms)= 0.78
	TPEAK (hrs)= 15.58

VOLUME (mm)= 47.57

TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25
1.08	0.00	32.42	0.10	63.75	0.24	95.08	0.25
1.17	0.00	32.50	0.10	63.83	0.23	95.17	0.24
1.25	0.00	32.58	0.10	63.92	0.23	95.25	0.21
1.33	0.00	32.67	0.10	64.00	0.23	95.33	0.25
1.42	0.00	32.75	0.10	64.08	0.23	95.42	0.22
1.50	0.00	32.83	0.10	64.17	0.23	95.50	0.23
1.58	0.00	32.92	0.10	64.25	0.24	95.58	0.22
1.67	0.00	33.00	0.10	64.33	0.23	95.67	0.24
1.75	0.00	33.08	0.10	64.42	0.23	95.75	0.26
1.83	0.00	33.17	0.10	64.50	0.23	95.83	0.24
1.92	0.00	33.25	0.11	64.58	0.23	95.92	0.23
2.00	0.00	33.33	0.11	64.67	0.24	96.00	0.24
2.08	0.00	33.42	0.11	64.75	0.24	96.08	0.24
2.17	0.00	33.50	0.11	64.83	0.24	96.17	0.24
2.25	0.00	33.58	0.11	64.92	0.24	96.25	0.24
2.33	0.00	33.67	0.11	65.00	0.24	96.33	0.24
2.42	0.00	33.75	0.11	65.08	0.23	96.42	0.24
2.50	0.00	33.83	0.11	65.17	0.23	96.50	0.24
2.58	0.00	33.92	0.11	65.25	0.23	96.58	0.23
2.67	0.00	34.00	0.11	65.33	0.23	96.67	0.24
2.75	0.00	34.08	0.11	65.42	0.22	96.75	0.23
2.83	0.00	34.17	0.11	65.50	0.22	96.83	0.23
2.92	0.00	34.25	0.11	65.58	0.22	96.92	0.24
3.00	0.00	34.33	0.11	65.67	0.22	97.00	0.23
3.08	0.00	34.42	0.11	65.75	0.22	97.08	0.22
3.17	0.00	34.50	0.11	65.83	0.22	97.17	0.23
3.25	0.00	34.58	0.11	65.92	0.21	97.25	0.22
3.33	0.00	34.67	0.11	66.00	0.21	97.33	0.25
3.42	0.00	34.75	0.11	66.08	0.21	97.42	0.22
3.50	0.00	34.83	0.11	66.17	0.20	97.50	0.24
3.58	0.00	34.92	0.11	66.25	0.20	97.58	0.23
3.67	0.00	35.00	0.11	66.33	0.20	97.67	0.22
3.75	0.00	35.08	0.11	66.42	0.20	97.75	0.23











# Pre-Development - SCUBE

```

=====
V V I SSSS U U A L (v 6.2.2018)
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.
    
```

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

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
2c01411a-b55f-40aa-a8dd-4677af8fd07e\
Summary filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
2c01411a-b55f-40aa-a8dd-4677af8fd07e\
    
```

DATE: 04-10-2024 TIME: 01:16:43

USER:

COMMENTS:

```

*****
** SIMULATION : 100yrHope_SCSII_6hr.stm **
*****
    
```

```

| READ STORM | Filename: C:\Users\jannaormond\AppData\Local\Temp\
    
```

```

PEAK FLOW (cms) = 3.787 (i)
TIME TO PEAK (hrs) = 3.833
RUNOFF VOLUME (mm) = 38.043
TOTAL RAINFALL (mm) = 101.620
RUNOFF COEFFICIENT = 0.374

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

```

| CALIB |
| STANDHYD ( 5012) | Area (ha) = 39.40
| ID= 1 DT= 5.0 min | Total Imp(%) = 38.00 Dir. Conn.(%) = 24.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha) = 14.97 24.43
Dep. Storage (mm) = 6.00 8.00
Average Slope (%) = 1.00 1.00
Length (m) = 512.51 40.00
Mannings n = 0.013 0.250
    
```

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

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 107.14
over (min) = 5.00 15.00
Storage Coeff. (min)= 5.65 (ii) 14.10 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
    
```

```

| Ptotal=101.62 mm | ec528c0d-4c97-4ad9-80b7-e31bdfec4424\ff8cc32c
| Comments: Mount Hope-6 hour SCS Distribution Desig
    
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.09	1.50	10.23	3.00	22.51	4.50	6.14
0.17	4.09	1.67	10.23	3.17	22.51	4.67	6.14
0.33	4.09	1.83	10.23	3.33	22.51	4.83	6.14
0.50	6.14	2.00	12.28	3.50	10.23	5.00	4.09
0.67	6.14	2.17	12.28	3.67	10.23	5.17	4.09
0.83	6.14	2.33	12.28	3.83	10.23	5.33	4.09
1.00	6.14	2.50	61.38	4.00	8.18	5.50	4.09
1.17	6.14	2.67	110.48	4.17	8.18	5.67	4.09
1.33	6.14	2.83	159.59	4.33	8.18		

```

| CALIB |
| NASHYD ( 5011) | Area (ha) = 80.20 Curve Number (CN) = 65.0
| ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00
| U.H. Tp(hrs) = 0.85
    
```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 3.621

```

Unit Hyd. peak (cms) = 0.20 0.08
*TOTALS*
PEAK FLOW (cms) = 3.93 4.06 7.301 (iii)
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 95.62 43.76 56.20
TOTAL RAINFALL (mm) = 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.43 0.55
    
```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 5011): 80.20 3.787 3.83 38.04
+ ID2= 2 ( 5012): 39.40 7.301 3.00 56.20
-----
ID = 3 ( 0100): 119.60 8.229 3.00 44.03
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0502) |
| IN= 2--> OUT= 1 | Routing time step (min) = 5.00
    
```

<----- DATA FOR SECTION (1537.5) ----->			
Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	

155.81 88.53 0.1100  
 183.05 88.85 0.1100  
 187.19 88.84 0.1100  
 211.21 88.88 0.1100

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0100)	119.60	8.23	3.00	44.03	1.25	0.55
OUTFLOW: ID= 1 ( 0502)	119.60	5.08	3.83	44.02	1.13	0.61

CALIB  
 NASHYD ( 5021) | Area (ha)= 25.20 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.46

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14

0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	12.28	4.083	8.18	5.58	4.09
1.167	6.14	2.667	12.28	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.662  
 PEAK FLOW (cms)= 0.724 (i)  
 TIME TO PEAK (hrs)= 4.583  
 RUNOFF VOLUME (mm)= 35.158  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.346

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

CALIB  
 STANDHYD ( 5022) | Area (ha)= 25.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 30.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.88 15.02  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 415.53 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14

0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 97.19  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.98 (ii) 13.77 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.28 2.27 5.160 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 40.29 56.89  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.40 0.56

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0101)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5021): 25.20 0.724 4.58 35.16  
 + ID2= 2 ( 5022): 25.90 5.160 3.00 56.89  
 ID = 3 ( 0101): 51.10 5.237 3.00 46.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0101): 51.10 5.237 3.00 46.17  
 + ID2= 2 ( 0502): 119.60 5.084 3.83 44.02  
 ID = 3 ( 0102): 170.70 8.158 3.00 44.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2 ----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89

1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	170.70	8.16	3.00	44.66	1.47	1.20
OUTFLOW: ID= 1 ( 0503)	170.70	7.61	3.08	44.66	1.43	1.18

CALIB	Area (ha)=	1.70	Curve Number (CN)=	71.0
NASHYD ( 5031)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.82		

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.079

PEAK FLOW (cms)= 0.096 (i)

TIME TO PEAK (hrs)= 3.833

RUNOFF VOLUME (mm)= 44.407

TOTAL RAINFALL (mm)= 101.620

RUNOFF COEFFICIENT = 0.437

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

CALIB	Area (ha)=	12.20	Dir. Conn.(%)=	47.00
STANDHYD ( 5032)	Total Imp(%)=	59.00		
ID= 1 DT= 5.0 min				

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	7.20	5.00
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	285.19	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 133.17

Storage Coeff. (min)=	5.00	15.00	
Unit Hyd. Tpeak (min)=	3.97 (ii)	11.72 (ii)	
Unit Hyd. peak (cms)=	5.00	15.00	
	0.24	0.09	
			*TOTALS*
PEAK FLOW (cms)=	2.47	1.14	3.440 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	95.62	51.84	72.41
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.51	0.71

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0103)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5031):	1.70	0.096	3.83	44.41
+ ID2= 2 ( 5032):	12.20	3.440	3.00	72.41
=====				
ID = 3 ( 0103):	13.90	3.465	3.00	68.99

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 ( 0103):	13.90	3.465	3.00	68.99
+ ID2= 2 ( 0503):	170.70	7.611	3.08	44.66
=====				
ID = 3 ( 0104):	184.60	10.236	3.00	46.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)	Routing time step (min)=	5.00
IN= 2---> OUT= 1		

----- DATA FOR SECTION ( 815.4) -----  
Distance Elevation Manning

19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	184.60	10.24	3.00	46.50	0.84	0.35
OUTFLOW: ID= 1 ( 0504)	184.60	8.20	3.25	46.50	0.81	0.34

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.89

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.013

PEAK FLOW (cms)= 0.015 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 41.113  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.405

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

CALIB  
 STANDHYD ( 5042) Area (ha)= 7.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.88 2.52  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 222.11 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 133.73  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.42 (ii) 11.16 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.74 0.58 2.236 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 49.77 74.53  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.49 0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5041): 0.30 0.015 3.92 41.11  
 + ID2= 2 ( 5042): 7.40 2.236 3.00 74.53  
 ID = 3 ( 0105): 7.70 2.240 3.00 73.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0105): 7.70 2.240 3.00 73.22  
 + ID2= 2 ( 0504): 184.60 8.201 3.25 46.50  
 ID = 3 ( 0106): 192.30 8.885 3.25 47.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5201) Area (ha)= 22.80 Curve Number (CN)= 72.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.31

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09

1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.663

PEAK FLOW (cms)= 0.928 (i)  
 TIME TO PEAK (hrs)= 4.417  
 RUNOFF VOLUME (mm)= 45.555  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.448

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

CALIB  
 STANDHYD ( 5202) Area (ha)= 6.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 23.00 Dir. Conn.(%)= 12.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.59 5.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 214.48 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 113.06  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.35 (ii) 11.62 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.36 1.02 1.225 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 49.45 54.99  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.49 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0111)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5201):	22.80	0.928	4.42	45.55
+ ID2= 2 ( 5202):	6.90	1.225	3.00	54.99
ID = 3 ( 0111):	29.70	1.350	3.00	47.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0521)  
IN= 2--> OUT= 1 | Routing time step (min)= 5.00

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel

0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.113 (i)  
TIME TO PEAK (hrs)= 3.917  
RUNOFF VOLUME (mm)= 51.711  
TOTAL RAINFALL (mm)= 101.620  
RUNOFF COEFFICIENT = 0.509

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

CALIB  
STANDHYD ( 5212) | Area (ha)= 13.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 52.00 Dir. Conn.(%)= 40.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	7.18	6.62
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	303.32	40.00
Mannings n	0.013	0.250

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

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14

513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLW : ID= 2 ( 0111)	29.70	1.35	3.00	47.75	0.29
OUTFLOW: ID= 1 ( 0521)	29.70	1.03	4.67	47.73	0.28

CALIB  
NASHYD ( 5211) | Area (ha)= 1.90 Curve Number (CN)= 77.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.95

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
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 143.83  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.12 (ii) 11.64 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 2.37 1.65 3.795 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 58.15 73.14  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.57 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.113	3.92	51.71
+ ID2= 2 ( 5212):	13.80	3.795	3.00	73.14
ID = 3 ( 0112):	15.70	3.821	3.00	70.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0112):	15.70	3.821	3.00	70.55
+ ID2= 2 ( 0521):	29.70	1.031	4.67	47.73
-----				
ID = 3 ( 0113):	45.40	4.279	3.00	55.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):	192.30	8.885	3.25	47.57
+ ID2= 2 ( 0113):	45.40	4.279	3.00	55.62
-----				
ID = 3 ( 0114):	237.70	12.423	3.00	49.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)		Routing time step (min)'= 5.00	
IN= 2-->	OUT= 1		

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.084 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 41.118  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.405

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

CALIB			
STANDHYD ( 5052)	Area (ha)=	PERVIOUS (i)	PERVIOUS (i)
ID= 1 DT= 5.0 min	14.60		
	Total Imp(%)=	66.00	Dir. Conn.(%)= 54.00

Surface Area (ha)=	9.64	4.96
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	311.98	40.00
Mannings n	=	0.013

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

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09

TRAVEL TIME TABLE						
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)	
0.12	79.13	.418E+03	0.4	0.15	18.59	
0.23	79.25	.899E+03	1.3	0.25	11.41	
0.35	79.36	.140E+04	2.7	0.33	8.70	
0.46	79.48	.191E+04	4.4	0.39	7.22	
0.58	79.59	.244E+04	6.5	0.46	6.26	
0.69	79.71	.299E+04	8.9	0.51	5.58	
0.81	79.82	.355E+04	11.7	0.56	5.08	
0.92	79.94	.413E+04	14.7	0.61	4.68	
1.04	80.05	.472E+04	18.1	0.65	4.36	
1.15	80.17	.533E+04	21.7	0.70	4.09	
1.27	80.28	.598E+04	25.7	0.74	3.88	
1.38	80.40	.666E+04	29.7	0.76	3.74	
1.50	80.51	.740E+04	33.7	0.78	3.67	
1.61	80.63	.822E+04	38.1	0.79	3.59	
1.73	80.74	.909E+04	43.1	0.81	3.52	
1.84	80.86	.100E+05	48.6	0.83	3.45	
1.96	80.97	.111E+05	48.4	0.74	3.83	
2.07	81.09	.128E+05	43.8	0.59	4.86	
2.19	81.21	.155E+05	40.6	0.45	6.35	

<---- hydrograph ---->								<-pipe / channel->	
INFLOW : ID= 2 ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)			
237.70	237.70	12.42	3.00	49.11	0.84	0.57			
OUTFLOW: ID= 1 ( 0505)	237.70	11.81	3.08	49.11	0.81	0.56			

CALIB			
NASHYD ( 5051)	Area (ha)=	Curve Number (CN)=	68.0
ID= 1 DT= 5.0 min	Ia (mm)=	# of Linear Res.(N)=	3.00
	U.H. Tp(hrs)=	0.62	

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14

0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 133.73  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.19 (ii) 11.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 3.39 1.12 4.336 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 49.77 74.53  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.49 0.73

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 5051):	1.30	0.084	3.58	41.12
+ ID2= 2 ( 5052):	14.60	4.336	3.00	74.53
-----				
ID = 3 ( 0107):	15.90	4.367	3.00	71.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

ID1= 1 ( 0107): 15.90 4.367 3.00 71.80  
 + ID2= 2 ( 0505): 237.70 11.814 3.08 49.11  
 =====  
 ID = 3 ( 0108): 253.60 14.830 3.00 50.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506) |  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08

TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 44.407  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.437

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

CALIB |  
 STANDHYD ( 5062) | Area (ha)= 7.80  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

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

TIME RAIN		TIME RAIN		TIME RAIN		TIME RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 140.91  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.47 (ii) 11.05 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.09

1.65 79.87 .318E+04 11.7 1.10 4.52  
 1.77 80.00 .524E+04 15.8 0.90 5.52  
 1.90 80.12 .973E+04 24.3 0.74 6.69  
 2.02 80.24 .158E+05 39.7 0.75 6.62  
 2.15 80.37 .230E+05 59.2 0.77 6.46  
 2.27 80.49 .349E+05 90.3 0.77 6.44

<---- hydrograph ----> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0108) 253.60 14.83 3.00 50.53 1.74 0.94  
 OUTFLOW: ID= 1 ( 0506) 253.60 13.49 3.17 50.53 1.71 1.00

CALIB |  
 NASHYD ( 5061) | Area (ha)= 3.90 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	4.09	1.583	10.23
0.167	4.09	1.667	10.23
0.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23
0.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23
0.583	6.14	2.083	12.28
0.667	6.14	2.167	12.28
0.750	6.14	2.250	12.28
0.833	6.14	2.333	12.28
0.917	6.14	2.417	12.28
1.000	6.14	2.500	12.28
1.083	6.14	2.583	61.38
1.167	6.14	2.667	61.38
1.250	6.14	2.750	110.48
1.333	6.14	2.833	110.48
1.417	6.14	2.917	159.59
1.500	6.14	3.000	159.59

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.273 (i)

PEAK FLOW (cms)= 1.80 0.67 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 2.375 (iii)  
 RUNOFF VOLUME (mm)= 95.62 52.92 3.00  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.52 0.74

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5061): 3.90 0.273 3.58 44.41  
 + ID2= 2 ( 5062): 7.80 2.375 3.00 75.55  
 =====  
 ID = 3 ( 0109): 11.70 2.477 3.00 65.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0109): 11.70 2.477 3.00 65.17  
 + ID2= 2 ( 0506): 253.60 13.488 3.17 50.53  
 =====  
 ID = 3 ( 0110): 265.30 14.658 3.17 51.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB |  
 NASHYD ( 5101) | Area (ha)= 0.80 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.42

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.022

PEAK FLOW (cms) = 0.026 (i)  
 TIME TO PEAK (hrs) = 4.583  
 RUNOFF VOLUME (mm) = 39.043  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.384

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

CALIB		Area (ha)	Dir. Conn. (%)
STANDHYD ( 5102)		0.90	35.00
ID= 1 DT= 5.0 min		Total Imp (%) = 50.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.45	0.45
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	77.46	40.00
Mannings n	0.013	0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0511)		Area (ha)	Curve Number (CN)
IN= 2	OUT= 1	1.90	67.0
		Ia (mm) = 8.00	# of Linear Res. (N) = 3.00
		U.H. Tp (hrs) = 0.56	

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

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

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

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

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0115)	1.70	0.24	3.00	52.08	0.05	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.18	3.08	52.08	0.03	0.24

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 120.33  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 1.82 (ii) 9.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.32 0.11

\*TOTALS\*

PEAK FLOW (cms) = 0.14 0.10 0.241 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 95.62 46.47 63.67  
 TOTAL RAINFALL (mm) = 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.46 0.63

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)		AREA	QPEAK	TPEAK	R.V.
		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5101):		0.80	0.026	4.58	39.04
+ ID2= 2 ( 5102):		0.90	0.241	3.00	63.67
-----					
ID = 3 ( 0115):		1.70	0.244	3.00	52.08

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.129

PEAK FLOW (cms) = 0.128 (i)  
 TIME TO PEAK (hrs) = 3.500  
 RUNOFF VOLUME (mm) = 40.070  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.394

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

CALIB		Area (ha)	Dir. Conn. (%)
STANDHYD ( 5112)		1.10	35.00
ID= 1 DT= 5.0 min		Total Imp (%) = 50.00	

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.55 0.55



Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 85.63 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 134.29  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.93 (ii) 9.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.11

\*TOTALS\*

PEAK FLOW (cms)= 0.17 0.14 0.313 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 52.00 67.26  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.51 0.66

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

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

INFLOW: ID= 2 ( 0117)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
4.70	0.53	3.00	50.78	0.64	0.41	
OUTFLOW: ID= 1 ( 0512)	4.70	0.32	3.25	50.77	0.54	0.36

CALIB  
 NASHYD ( 5121) | Area (ha)= 0.70 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.14

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09

ADD HYD ( 0116)  
 1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 ( 5111):	1.90	0.128	3.50	40.07
+ ID2= 2 ( 5112):	1.10	0.313	3.00	67.26
-----	-----	-----	-----	
ID = 3 ( 0116):	3.00	0.366	3.00	50.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)  
 1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 ( 0116):	3.00	0.366	3.00	50.04
+ ID2= 2 ( 0511):	1.70	0.175	3.08	52.08
-----	-----	-----	-----	
ID = 3 ( 0117):	4.70	0.533	3.00	50.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71

1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.023  
 PEAK FLOW (cms)= 0.031 (i)  
 TIME TO PEAK (hrs)= 4.167  
 RUNOFF VOLUME (mm)= 44.405  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.437

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

CALIB  
 STANDHYD ( 5122) | Area (ha)= 3.20  
 ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.92 1.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 146.06 40.00  
 Mannings n = 0.013 0.250

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

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09

1.417	6.14	2.917	159.59	4.417	8.18
1.500	6.14	3.000	159.59	4.500	8.18

Max. Eff. Inten. (mm/hr)= 159.59 138.15  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.66 (ii) 10.30 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.66 0.32 0.934 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 52.54 72.79  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.52 0.72

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

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 5121):	0.70	0.031	4.17	44.40	
+ ID2= 2 ( 5122):	3.20	0.934	3.00	72.79	
=====					
ID = 3 ( 0118):	3.90	0.939	3.00	67.69	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0118):	3.90	0.939	3.00	67.69	
+ ID2= 2 ( 0512):	4.70	0.324	3.25	50.77	
=====					
ID = 3 ( 0119):	8.60	1.194	3.00	58.44	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0110):	265.30	14.658	3.17	51.17	
+ ID2= 2 ( 0119):	8.60	1.194	3.00	58.44	
=====					
ID = 3 ( 0120):	273.90	15.396	3.17	51.40	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD ( 6011)					
	Area	(ha)=	44.10	Curve Number	(CN)= 62.0
ID= 1 DT= 5.0 min	Ia	(mm)=	8.00	# of Linear Res.	(N)= 3.00
U.H. Tp(hrs)= 0.83					

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

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	0.167	4.09	1.667	10.23
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14	0.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14	0.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14	0.583	6.14	2.083	12.28
0.667	6.14	2.167	12.28	3.667	10.23	5.08	4.09	0.750	6.14	2.250	12.28
0.833	6.14	2.333	12.28	3.833	10.23	5.17	4.09	0.917	6.14	2.417	12.28
1.000	6.14	2.500	12.28	4.000	10.23	5.25	4.09	1.083	6.14	2.583	12.28
1.167	6.14	2.667	12.28	4.167	8.18	5.33	4.09	1.250	6.14	2.750	110.48
1.417	6.14	2.917	159.59	4.417	8.18	5.42	4.09	1.500	6.14	3.000	159.59
1.500	6.14	3.000	159.59	4.500	8.18	5.50	4.09				

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.942 (i)  
TIME TO PEAK (hrs)= 3.833  
RUNOFF VOLUME (mm)= 35.157  
TOTAL RAINFALL (mm)= 101.620  
RUNOFF COEFFICIENT = 0.346

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

CALIB					
STANDHYD ( 6012)					
ID= 1 DT= 5.0 min	Area	(ha)=	11.00	Dir. Conn.(%)=	16.00
Total Imp(%)= 28.00					
IMPERVIOUS PERVIOUS (i)					
Surface Area	(ha)=	3.08	7.92		
Dep. Storage	(mm)=	6.00	8.00		
Average Slope	(%)=	1.00	1.00		
Length	(m)=	270.80	40.00		
Mannings n	=	0.013	0.250		

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

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	0.167	4.09	1.667	10.23
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14	0.250	4.09	1.750	10.23
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14	0.417	4.09	1.917	10.23
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14	0.583	6.14	2.083	12.28
0.667	6.14	2.167	12.28	3.667	10.23	5.08	4.09	0.750	6.14	2.250	12.28
0.833	6.14	2.333	12.28	3.833	10.23	5.17	4.09	0.917	6.14	2.417	12.28
1.000	6.14	2.500	12.28	4.000	10.23	5.25	4.09	1.083	6.14	2.583	12.28
1.167	6.14	2.667	12.28	4.167	8.18	5.33	4.09	1.250	6.14	2.750	110.48
1.417	6.14	2.917	159.59	4.417	8.18	5.42	4.09	1.500	6.14	3.000	159.59
1.500	6.14	3.000	159.59	4.500	8.18	5.50	4.09				

Max. Eff. Inten. (mm/hr)= 159.59 91.88  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.85 (ii) 12.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.25 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.76 1.16 1.726 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 39.35 48.35  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.39 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)					
1 + 2 = 3					
	AREA	QPEAK	TPEAK	R.V.	
	(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 6011):	44.10	1.942	3.83	35.16	
+ ID2= 2 ( 6012):	11.00	1.726	3.00	48.35	
=====					
ID = 3 ( 0124):	55.10	2.327	3.50	37.79	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD ( 6021)					
ID= 1 DT= 5.0 min	Area	(ha)=	43.60	Curve Number	(CN)= 62.0
U.H. Tp(hrs)= 0.95					

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

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14	0.167	4.09	1.667	10.23
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14	0.333	4.09	1.833	10.23
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14	0.500	4.09	2.000	10.23
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09	0.667	6.14	2.167	12.28
0.750	6.14	2.250	12.28	3.750	10.23	5.17	4.09	0.833	6.14	2.333	12.28
0.917	6.14	2.417	12.28	3.917	10.23	5.25	4.09	1.000	6.14	2.500	12.28
1.083	6.14	2.583	12.28	4.083	8.18	5.33	4.09	1.167	6.14	2.667	12.28
1.250	6.14	2.750	110.48	4.250	8.18	5.42	4.09	1.333	6.14	2.833	110.48
1.417	6.14	2.917	159.59	4.417	8.18	5.50	4.09	1.500	6.14	3.000	159.59
1.500	6.14	3.000	159.59	4.500	8.18	5.58	4.09				

1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Unit Hyd Qpeak (cms) = 1.753

PEAK FLOW (cms) = 1.734 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 35.157  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.346

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

CALIB  
 STANDHYD ( 6022) Area (ha) = 12.90  
 ID= 1 DT= 5.0 min Total Imp(%) = 35.00 Dir. Conn.(%) = 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 4.51 8.38  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 293.26 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09

1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 94.24  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.04 (ii) 12.94 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms) = 1.28 1.26 2.325 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.00 3.00  
 RUNOFF VOLUME (mm) = 95.62 39.77 52.62  
 TOTAL RAINFALL (mm) = 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.39 0.52

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

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 6021): 43.60 1.734 4.00 35.16  
 + ID2= 2 ( 6022): 12.90 2.325 3.00 52.62  
 ID = 3 ( 0125): 56.50 2.680 3.00 39.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0124): 55.10 2.327 3.50 37.79  
 + ID2= 2 ( 0125): 56.50 2.680 3.00 39.14  
 ID = 3 ( 0126): 111.60 4.886 3.00 38.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)

IN= 2--> OUT= 1 Routing time step (min) = 5.00

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700 Main Channel
129.84	89.59	0.0700 Main Channel
130.34	90.09	0.0700 / 0.1400 Main Channel
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

(ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0126) 111.60 4.89 3.00 38.48 0.71 0.25  
 OUTFLOW: ID= 1 ( 0603) 111.60 3.29 4.50 38.47 0.66 0.23

CALIB  
 NASHYD ( 0603) Area (ha) = 19.00 Curve Number (CN) = 72.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.32

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.550

PEAK FLOW (cms) = 0.771 (i)  
 TIME TO PEAK (hrs) = 4.417  
 RUNOFF VOLUME (mm) = 45.555  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.448

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

CALIB  
 STANDHYD ( 6032) Area (ha)= 15.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.40 11.30  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 118.78  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.29 (ii) 12.40 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.01 2.23 2.894 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 50.39 57.17  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.50 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%

1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Unit Hyd Qpeak (cms)= 0.279  
 PEAK FLOW (cms)= 0.365 (i)  
 TIME TO PEAK (hrs)= 4.333  
 RUNOFF VOLUME (mm)= 43.287  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.426

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

CALIB  
 STANDHYD ( 6102) Area (ha)= 12.10  
 ID= 1 DT= 5.0 min Total Imp(%)= 27.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.27 8.83  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 284.02 40.00  
 Mannings n = 0.013 0.250

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

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0127) -----

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.771	4.42	45.55
+ ID2= 2 ( 6032):	15.70	2.894	3.00	57.17
=====				
ID = 3 ( 0127):	34.70	2.997	3.00	50.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6101) Area (ha)= 9.00 Curve Number (CN)= 70.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.23

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 109.05  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.96 (ii) 12.36 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.84 1.59 2.173 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 47.35 55.07  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.47 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6101):	9.00	0.365	4.33	43.29
+ ID2= 2 ( 6102):	12.10	2.173	3.00	55.07
=====				
ID = 3 ( 0136):	21.10	2.226	3.00	50.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ADD HYD ( 0128) -----

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0127):	34.70	2.997	3.00	50.81
+ ID2= 2 ( 0136):	21.10	2.226	3.00	50.05
=====				
ID = 3 ( 0128):	55.80	5.224	3.00	50.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ADD HYD ( 0128) -----

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	55.80	5.224	3.00	50.52
+ ID2= 2 ( 0603):	111.60	3.287	4.50	38.47
-----				
ID = 1 ( 0128):	167.40	6.109	3.00	42.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

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

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.032 (i)  
TIME TO PEAK (hrs)= 7.500  
RUNOFF VOLUME (mm)= 54.387  
TOTAL RAINFALL (mm)= 101.620  
RUNOFF COEFFICIENT = 0.535

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

CALIB  
STANDHYD ( 6042) | Area (ha)= 22.30  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 14.49 7.81  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 385.57 40.00  
Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 165.04  
over (min) 5.00 15.00

2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0128)	167.40	6.11	3.00	42.49	2.45	0.08
OUTFLOW: ID= 1 ( 0604)	167.40	3.68	4.75	42.48	2.28	0.08

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
NASHYD ( 6041) | Area (ha)= 1.70 Curve Number (CN)= 79.0  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 4.12

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Storage Coeff. (min)= 4.76 (ii) 11.87 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.22 0.09

PEAK FLOW (cms)= 5.01 2.24 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 6.959 (iii)  
RUNOFF VOLUME (mm)= 95.62 62.70 3.00  
TOTAL RAINFALL (mm)= 101.62 101.62 80.15  
RUNOFF COEFFICIENT = 0.94 0.62 101.62 0.79

\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 6041): 1.70 0.032 7.50 54.39  
+ ID2= 2 ( 6042): 22.30 6.959 3.00 80.15  
-----  
ID = 3 ( 0129): 24.00 6.960 3.00 78.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)  
1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0129): 24.00 6.960 3.00 78.32  
+ ID2= 2 ( 0604): 167.40 3.678 4.75 42.48  
-----  
ID = 3 ( 0130): 191.40 8.664 3.00 46.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100

3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.03	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ---->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.40	8.66	3.00	46.97	1.19
OUTFLOW : ID= 1 ( 0605)	191.40	4.15	3.50	46.97	0.95

Surface Area (ha)=	6.70	4.10
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	268.33	40.00
Mannings n	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)=	159.59	148.49
over (min)	5.00	15.00
Storage Coeff. (min)=	3.83 (ii)	11.25 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.25	0.09

\*TOTALS\*

PEAK FLOW (cms)=	2.34	1.07	3.255 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	95.62	57.09	76.35
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.56	0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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					
NASHYD ( 6111)	Area (ha)=	0.60	Curve Number (CN)=	77.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.08			

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)=	0.033 (i)
TIME TO PEAK (hrs)=	4.083
RUNOFF VOLUME (mm)=	51.708
TOTAL RAINFALL (mm)=	101.620
RUNOFF COEFFICIENT =	0.509

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB					
STANDHYD ( 6112)	Area (ha)=	10.80	Dir. Conn.(%)=	50.00	
ID= 1 DT= 5.0 min	Total Imp(%)=	62.00			

IMPERVIOUS PERVIOUS (i)

ADD HYD ( 0137)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 ( 6111):	0.60	0.033	4.08	51.71	
+ ID2= 2 ( 6112):	10.80	3.255	3.00	76.35	
=====					
ID = 3 ( 0137):	11.40	3.261	3.00	75.06	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)					
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 ( 0137):	11.40	3.261	3.00	75.06	
+ ID2= 2 ( 0605):	191.40	4.152	3.50	46.97	
=====					
ID = 3 ( 0139):	202.80	6.076	3.00	48.55	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB					
NASHYD ( 6051)	Area (ha)=	0.40	Curve Number (CN)=	66.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00	
	U.H. Tp(hrs)=	1.31			

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09

1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 0.012

PEAK FLOW (cms) = 0.014 (i)  
 TIME TO PEAK (hrs) = 4.417  
 RUNOFF VOLUME (mm) = 39.039  
 TOTAL RAINFALL (mm) = 101.620  
 RUNOFF COEFFICIENT = 0.384

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB |  
 STANDHYD ( 6052) | Area (ha) = 15.50  
 ID= 1 DT= 5.0 min | Total Imp(%) = 66.00 Dir. Conn.(%) = 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 10.23 5.27  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 321.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09

1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		
Max.Eff.Inten.(mm/hr)=	159.59	128.04					
over (min)	5.00	15.00					
Storage Coeff. (min)=	4.27 (ii)	12.14 (ii)					
Unit Hyd. Tpeak (min)=	5.00	15.00					
Unit Hyd. peak (cms)=	0.23	0.09					
PEAK FLOW (cms)=	3.59	1.13					
TIME TO PEAK (hrs)=	3.00	3.08					
RUNOFF VOLUME (mm)=	95.62	47.00					
TOTAL RAINFALL (mm)=	101.62	101.62					
RUNOFF COEFFICIENT =	0.94	0.47					

\*TOTALS\*

4.539 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0131)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6051):	0.40	0.014	4.42	39.04
+ ID2= 2 ( 6052):	15.50	4.539	3.00	73.53
=====				
ID = 3 ( 0131):	15.90	4.541	3.00	72.66

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 ( 0131):	15.90	4.541	3.00	72.66
+ ID2= 2 ( 0139):	202.80	6.076	3.00	48.55
=====				
ID = 3 ( 0132):	218.70	10.617	3.00	50.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2--> OUT= 1 | Routing time step (min) = 5.00

DATA FOR SECTION ( 350.0)

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.02	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700 Main Channel
118.05	78.63	0.0700 Main Channel
124.40	78.89	0.0700 / 0.1100 Main Channel
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

hydrograph

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW: ID= 2 ( 0132)	218.70	10.62	3.00	50.30	0.84	0.76
OUTFLOW: ID= 1 ( 0530)	218.70	8.36	3.08	50.30	0.76	0.73

CALIB |  
 STANDHYD ( 5302) | Area (ha) = 5.80  
 ID= 1 DT= 5.0 min | Total Imp(%) = 60.00 Dir. Conn.(%) = 48.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 3.48 2.32  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 196.64 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 120.33  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.18 (ii) 11.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.27 0.09  
 PEAK FLOW (cms)= 1.22 0.48  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 95.62 46.47  
 TOTAL RAINFALL (mm)= 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.46

\*TOTALS\*

1.622 (iii)  
 3.00  
 70.06  
 101.62  
 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0530):	218.70	8.360	3.08	50.30
+ ID2= 2 ( 5302):	5.80	1.622	3.00	70.06
-----				
ID = 3 ( 0134):	224.50	9.277	3.00	50.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0120):	273.90	15.396	3.17	51.40
+ ID2= 2 ( 0134):	224.50	9.277	3.00	50.81
-----				
ID = 3 ( 0135):	498.40	24.465	3.08	51.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)	Routing time step (min)=	
IN= 2--> OUT= 1	5.00	
-----		
<----- DATA FOR SECTION ( 40.0) ----->		
Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900

CALIB  
 NASHYD ( 5071) Area (ha)= 8.40 Curve Number (CN)= 74.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.72

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 0.187  
 PEAK FLOW (cms)= 0.292 (i)  
 TIME TO PEAK (hrs)= 4.917  
 RUNOFF VOLUME (mm)= 47.930  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.472

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 5072)	40.50	30.00
ID= 1 DT= 5.0 min	Total Imp(%)= 45.00	
-----		
Surface Area (ha)	18.23	22.28
Dep. Storage (mm)	6.00	8.00

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

----- TRAVEL TIME TABLE -----						
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)	
0.16	76.44	.113E+03	0.0	0.14	88.10	
0.32	76.60	.451E+03	0.1	0.23	55.50	
0.49	76.76	.101E+04	0.4	0.30	42.35	
0.65	76.92	.180E+04	0.9	0.37	34.57	
0.81	77.09	.276E+04	1.6	0.44	28.86	
0.97	77.25	.388E+04	2.7	0.52	24.37	
1.14	77.41	.516E+04	4.0	0.59	21.56	
1.30	77.57	.660E+04	5.7	0.66	19.26	
1.46	77.74	.822E+04	7.8	0.72	17.67	
1.62	77.90	.100E+05	10.1	0.77	16.48	
1.79	78.06	.120E+05	12.8	0.82	15.54	
1.95	78.22	.141E+05	15.9	0.87	14.74	
2.11	78.39	.163E+05	19.4	0.91	14.06	
2.27	78.55	.187E+05	23.2	0.95	13.47	
2.44	78.71	.212E+05	27.3	0.99	12.95	
2.60	78.87	.239E+05	31.9	1.02	12.50	
2.76	79.04	.267E+05	36.8	1.06	12.10	
2.92	79.20	.320E+05	39.4	0.94	13.56	
3.09	79.36	.409E+05	45.7	0.85	14.94	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0135)	498.40	24.46	3.08	51.14	2.32	0.96
OUTFLOW: ID= 1 ( 0507)	498.40	21.16	3.33	51.14	2.18	0.92

Average Slope (%)= 1.00 1.00  
 Length (m)= 519.62 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 138.69  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 5.70 (ii) 13.32 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08

PEAK FLOW (cms)= 5.04 5.04  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 95.62 54.93  
 TOTAL RAINFALL (mm)= 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.54

\*TOTALS\*  
 9.320 (iii)  
 3.00  
 67.14  
 101.62  
 0.66

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.











000 TTTT TTTT H H Y Y M M 000 TM  
 0 0 T T H H Y Y MM MM 0 0  
 0 0 T T H H Y Y M M 0 0  
 000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc  
 Copyright 2007 - 2022 Smart City Water Inc  
 All rights reserved.

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voain.dat

Output filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\be95c9a8-21ad-4ac1-a17d-b66140ae2910\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\be95c9a8-21ad-4ac1-a17d-b66140ae2910\  
 DATE: 04-10-2024 TIME: 01:16:51

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : 10yrI16.stm \*\*  
 \*\*\*\*\*

READ STORM	Filename: C:\Users\jannaormond\AppData\Local\Temp\ec528c0d-4c97-4ad9-80b7-e31bdfec4424\62f6350e
Ptotal= 67.60 mm	Comments: Mount Hope-6 hour SCS Distribution Desig

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.70	1.50	6.76	3.00	14.87	4.50	4.06
0.17	2.70	1.67	6.76	3.17	14.87	4.67	4.06
0.33	2.70	1.83	6.76	3.33	14.87	4.83	4.06

0.50	4.06	2.00	8.11	3.50	6.76	5.00	2.70
0.67	4.06	2.17	8.11	3.67	6.76	5.17	2.70
0.83	4.06	2.33	8.11	3.83	6.76	5.33	2.70
1.00	4.06	2.50	40.56	4.00	5.41	5.50	2.70
1.17	4.06	2.67	73.01	4.17	5.41	5.67	2.70
1.33	4.06	2.83	105.46	4.33	5.41	5.83	2.70

CALIB					
NASHYD ( 5011)	Area (ha)=	80.20	Curve Number (CN)=	65.0	
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res. (N)=	3.00	
	U.H. Tp(hrs)=	0.85			

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 1.741 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 18.089  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 5012)	Area (ha)=	39.40	
ID= 1 DT= 5.0 min	Total Imp(%)=	38.00	Dir. Conn.(%)= 24.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.97	24.43
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	512.51	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 44.47  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 6.67 (ii) 18.68 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

PEAK FLOW (cms)= 2.53 1.64 3.612 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 21.60 31.20  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.32 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5011):	80.20	1.741	3.92	18.09
+ ID2= 2 ( 5012):	39.40	3.612	3.00	31.20
ID = 3 ( 0100):	119.60	3.973	3.00	22.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)	
IN= 2--> OUT= 1	Routing time step (min)= 5.00

<----- DATA FOR SECTION (1537.5) ----->			
Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	
187.19	88.84	0.1100	
211.21	88.88	0.1100	

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)

0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.93	21.56
1.21	88.05	.550E+05	7.1	0.96	20.87
1.33	88.17	.613E+05	10.6	0.99	20.29
1.44	88.28	.678E+05	15.5	1.01	20.00
1.56	88.40	.744E+05	22.8	1.03	19.87
1.67	88.51	.811E+05	32.1	1.05	19.80
1.79	88.63	.879E+05	41.2	1.07	19.77
1.90	88.74	.948E+05	54.6	1.09	19.77
2.02	88.86	.124E+06	64.7	1.11	19.77

0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	8.11	4.083	6.76	5.58	2.70
1.167	4.06	2.667	8.11	4.167	6.76	5.67	2.70
1.250	4.06	2.750	8.11	4.250	6.76	5.75	2.70
1.333	4.06	2.833	8.11	4.333	6.76	5.83	2.70
1.417	4.06	2.917	8.11	4.417	6.76	5.92	2.70
1.500	4.06	3.000	8.11	4.500	6.76	6.00	2.70

Unit Hyd Qpeak (cms) = 0.662

PEAK FLOW (cms) = 0.331 (i)  
 TIME TO PEAK (hrs) = 4.667  
 RUNOFF VOLUME (mm) = 16.500  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.244

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0100) 119.60 3.97 3.00 22.41 1.06 0.71  
 OUTFLOW : ID= 1 ( 0502) 119.60 2.86 3.58 22.41 0.96 0.87

CALIB  
 STANDHYD ( 5022) | Area (ha)= 25.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 30.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.88 15.02  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 415.53 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

--- DATA FOR SECTION (1157.9) ---

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

Max.Eff.Inten.(mm/hr)= 105.46 39.47  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.88 (ii) 18.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.19 0.06  
 \*TOTALS\*  
 PEAK FLOW (cms)= 2.12 0.90 2.709 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 19.57 32.18  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.29 0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0101)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5021): 25.20 0.331 4.67 16.50  
 + ID2= 2 ( 5022): 25.90 2.709 3.00 32.18  
 ID = 3 ( 0101): 51.10 2.737 3.00 24.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0101): 51.10 2.737 3.00 24.45  
 + ID2= 2 ( 0502): 119.60 2.858 3.58 22.41  
 ID = 3 ( 0102): 170.70 4.356 3.00 23.02

--- TRAVEL TIME TABLE ---

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93

3.69 87.90 .907E+05 223.4 0.92 6.77

```

<---- hydrograph ----> <-pipe / channel->
      AREA   QPEAK  TPEAK  R.V.  MAX DEPTH  MAX VEL
      (ha)   (cms) (hrs)  (mm)  (m)         (m/s)
INFLOW : ID= 2 ( 0102) 170.70 4.36  3.00 23.02  1.13  0.99
OUTFLOW : ID= 1 ( 0503) 170.70 4.02  3.33 23.02  1.09  0.96

```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
| CALIB          |
| STANDHYD ( 5032) | Area (ha)= 12.20
| ID= 1 DT= 5.0 min | Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00
-----

```

```

IMPERVIOUS          PERVIOUS (i)
Surface Area (ha)= 7.20 5.00
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 285.19 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

-----
| CALIB          |
| NASHYD ( 5031) | Area (ha)= 1.70 Curve Number (CN)= 71.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.82
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME		TIME		TIME		TIME	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.079

```

PEAK FLOW (cms)= 0.046 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 21.745
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.322

```

TIME		TIME		TIME		TIME	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

```

Max.Eff.Inten.(mm/hr)= 105.46 58.34
over (min) = 5.00 20.00
Storage Coeff. (min)= 4.69 (ii) 15.47 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.22 0.07
*TOTALS*
PEAK FLOW (cms)= 1.61 0.48 1.944 (iii)
TIME TO PEAK (hrs)= 3.00 3.17 3.00
RUNOFF VOLUME (mm)= 61.60 26.62 43.06
TOTAL RAINFALL (mm)= 67.60 67.60 67.60

```

RUNOFF COEFFICIENT = 0.91 0.39 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0103) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 5031): 1.70 0.046 3.83 21.75
+ ID2= 2 ( 5032): 12.20 1.944 3.00 43.06
=====
ID = 3 ( 0103): 13.90 1.954 3.00 40.45

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0104) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0103): 13.90 1.954 3.00 40.45
+ ID2= 2 ( 0503): 170.70 4.020 3.33 23.02
=====
ID = 3 ( 0104): 184.60 5.376 3.00 24.33

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0504) |
| IN= 2----> OUT= 1 |
Routing time step (min)= 5.00

```

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

```

<----- hydrograph ----> <-pipe / channel->
      AREA   QPEAK  TPEAK  R.V.  MAX DEPTH  MAX VEL
      (ha)   (cms) (hrs)  (mm)  (m)         (m/s)
INFLOW : ID= 2 ( 0104) 184.60 5.38  3.00 24.33  0.74  0.32
OUTFLOW : ID= 1 ( 0504) 184.60 4.51  3.50 24.33  0.71  0.32

```

```

-----
| CALIB          |
| NASHYD ( 5041) | Area (ha)= 0.30 Curve Number (CN)= 68.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.89
-----

```

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.007 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 19.823  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5042) | Area (ha) = 7.40  
 ID = 1 DT = 5.0 min | Total Imp (%) = 66.00 Dir. Conn. (%) = 54.00

IMPERVIOUS				PERVIOUS (i)			
Surface Area	(ha)	4.88	2.52	Dep. Storage	(mm)	6.00	8.00
Average Slope	(%)	1.00	1.00	Length	(m)	222.11	40.00
Mannings n	=	0.013	0.250				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 57.91  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 4.04 (ii) 14.85 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.24 0.08

PEAK FLOW (cms) = 1.14 0.26  
 TIME TO PEAK (hrs) = 3.00 3.17  
 RUNOFF VOLUME (mm) = 61.60 25.36  
 TOTAL RAINFALL (mm) = 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38

\*TOTALS\*

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3  
 ID1 = 1 ( 5041):

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
0.30	0.007	3.92	19.82

+ ID2 = 2 ( 5042): 7.40 1.347 3.00 44.93  
 ID = 3 ( 0105): 7.70 1.348 3.00 43.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3  
 ID1 = 1 ( 0105): 7.70 1.348 3.00 43.95  
 + ID2 = 2 ( 0504): 184.60 4.513 3.50 24.33  
 ID = 3 ( 0106): 192.30 4.813 3.42 25.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5201) | Area (ha) = 22.80 Curve Number (CN) = 72.0  
 ID = 1 DT = 5.0 min | Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
 U.H. Tp (hrs) = 1.31

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.663

PEAK FLOW (cms) = 0.444 (i)  
 TIME TO PEAK (hrs) = 4.500  
 RUNOFF VOLUME (mm) = 22.428  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.332

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5202) | Area (ha) = 6.90  
 ID = 1 DT = 5.0 min | Total Imp (%) = 23.00 Dir. Conn. (%) = 12.00

IMPERVIOUS				PERVIOUS (i)			
Surface Area	(ha)	1.59	5.31	Dep. Storage	(mm)	6.00	8.00
Average Slope	(%)	1.00	1.00	Length	(m)	214.48	40.00
Mannings n	=	0.013	0.250				

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.48  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 3.95 (ii) 15.56 (ii)



Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.07

PEAK FLOW (cms)= 0.24 0.42 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 0.524 (iii)  
 RUNOFF VOLUME (mm)= 61.60 24.98 29.37  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.37 0.43

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0111)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5201):	22.80	0.444	4.50	22.43
+ ID2= 2 ( 5202):	6.90	0.524	3.00	29.37
ID = 3 ( 0111):	29.70	0.597	3.25	24.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0521)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)

0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.056 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 26.220  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.388

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5212) Area (ha)= 13.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 52.00 Dir. Conn.(%)= 40.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	7.18	6.62
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	303.32	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70

0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

<--- hydrograph ---> <-pipe / channel-->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0111)	29.70	0.60	3.25	24.04	0.23	0.32
OUTFLOW: ID= 1 ( 0521)	29.70	0.52	4.50	24.03	0.22	0.31

CALIB  
 NASHYD ( 5211) Area (ha)= 1.90 Curve Number (CN)= 77.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.95

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 77.38  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 4.87 (ii) 14.49 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 1.54 0.78 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 2.189 (iii)  
 RUNOFF VOLUME (mm)= 61.60 30.73 43.08  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.45 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.056	4.00	26.22
+ ID2= 2 ( 5212):	13.80	2.189	3.00	43.08
ID = 3 ( 0112):	15.70	2.199	3.00	41.04

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0112):	15.70	2.199	3.00	41.04
+ ID2= 2 ( 0521):	29.70	0.517	4.50	24.03
ID = 3 ( 0113):	45.40	2.371	3.00	29.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0106):	192.30	4.813	3.42	25.12
+ ID2= 2 ( 0113):	45.40	2.371	3.00	29.91
=====				
ID = 3 ( 0114):	237.70	6.667	3.00	26.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)	ROUTING TIME STEP (min)= 5.00
IN= 2--> OUT= 1	

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26

1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.039 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 19.829  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.293

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	STANDHYD ( 5052)	AREA (ha)= 14.60	TOTAL IMP(%)= 66.00	DIR. CONN.(%)= 54.00
ID= 1 DT= 5.0 min				

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	9.64	4.96
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	311.98	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70

0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

INFLOW : ID= 2 ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
237.70	237.70	6.67	3.00	26.03	0.58	0.46
OUTFLOW: ID= 1 ( 0505)	237.70	6.12	3.08	26.03	0.55	0.44

CALIB	NASHYD ( 5051)	AREA (ha)= 1.30	CURVE NUMBER (CN)= 68.0
ID= 1 DT= 5.0 min		Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
		U.H. Tp(hrs)= 0.62	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70

1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46  
 over (min)= 5.00  
 Storage Coeff. (min)= 4.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.22

PEAK FLOW (cms)= 2.20  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 61.60  
 TOTAL RAINFALL (mm)= 67.60  
 RUNOFF COEFFICIENT = 0.91

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5051):	1.30	0.039	3.58	19.83
+ ID2= 2 ( 5052):	14.60	2.526	3.00	44.93
=====				
ID = 3 ( 0107):	15.90	2.538	3.00	42.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0107):	15.90	2.538	3.00	42.88
+ ID2= 2 ( 0505):	237.70	6.121	3.08	26.03
=====				
ID = 3 ( 0108):	253.60	7.885	3.00	27.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)
------------------

| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<---- hydrograph ----> <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

(ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0108) 253.60 7.89 3.00 27.09 1.45 1.21  
 OUTFLOW: ID= 1 ( 0506) 253.60 7.51 3.08 27.09 1.42 1.20

CALIB  
 NASHYD ( 5061) Area (ha)= 3.90 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.129 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 21.745  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.322

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5062) Area (ha)= 7.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	5.07	2.73
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	228.04	40.00
Mannings n	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 73.65  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.10 (ii) 13.92 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.18 0.31 1.430 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.36 45.50  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.40 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5061):	3.90	0.129	3.58	21.75
+ ID2= 2 ( 5062):	7.80	1.430	3.00	45.50
-----				
ID = 3 ( 0109):	11.70	1.472	3.00	37.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0109):	11.70	1.472	3.00	37.58
+ ID2= 2 ( 0506):	253.60	7.512	3.08	27.09
-----				
ID = 3 ( 0110):	265.30	8.352	3.08	27.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.42

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70

0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms) = 0.022

PEAK FLOW (cms) = 0.012 (i)  
 TIME TO PEAK (hrs) = 4.583  
 RUNOFF VOLUME (mm) = 18.648  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.276

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5102)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 0.90  
 Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.45 0.45  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 77.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr) = 105.46 50.94  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 2.15 (ii) 13.53 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms) = 0.09 0.04 0.126 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 61.60 23.29 36.69  
 TOTAL RAINFALL (mm) = 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.34 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5101):	0.80	0.012	4.58	18.65
+ ID2= 2 ( 5102):	0.90	0.126	3.00	36.69
ID = 3 ( 0115):	1.70	0.127	3.00	28.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)  
 IN= 2--> OUT= 1 Routing time step (min) = 5.00

DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100

33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100 / 0.0700
69.13	79.02	0.0700
92.42	79.04	0.0700
98.70	80.89	0.0700 / 0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100

TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

hydrograph <---> <--- pipe / channel --->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0115)	1.70	0.13	3.00	28.20	0.02	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.09	3.08	28.20	0.02	0.24

CALIB  
 NASHYD ( 5111)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 1.90 Curve Number (CN) = 67.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.56

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Unit Hyd Qpeak (cms) = 0.129

PEAK FLOW (cms) = 0.059 (i)  
 TIME TO PEAK (hrs) = 3.500  
 RUNOFF VOLUME (mm) = 19.230  
 TOTAL RAINFALL (mm) = 67.600  
 RUNOFF COEFFICIENT = 0.284

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5112)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 1.10  
 Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.55 0.55  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 85.63 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Hydrograph table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity and cumulative runoff over time.

Summary statistics table including: Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Summary table for ID=1 and ID=2 with columns: AREA, QPEAK, TPEAK, R.V. (mm).

ID = 3 ( 0116): 3.00 0.184 3.00 26.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Summary table for ID=1 and ID=2 with columns: AREA, QPEAK, TPEAK, R.V. (mm).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0512) | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 484.2) -----

Table with columns: Distance, Elevation, Manning, and Main Channel. Shows data for various points along a section.

----- TRAVEL TIME TABLE -----

Table with columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Shows travel time data for different depths and elevations.

Table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity and cumulative runoff over time.

Summary table for hydrograph and pipe/channel with columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL.

Summary table for CALIB with columns: Area, Curve Number, U.H., Tp.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Hydrograph table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity and cumulative runoff over time.

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.015 (i)
TIME TO PEAK (hrs)= 4.250

RUNOFF VOLUME (mm)= 21.742
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.322

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Summary table for CALIB with columns: Area, Total Imp, Dir. Conn.

Table with columns: Surface Area, Dep. Storage, Average Slope, Length, Mannings n. Rows show various parameters.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Hydrograph table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity and cumulative runoff over time.

Max.Eff.Inten.(mm/hr)= 105.46 over (min)= 5.00

Storage Coeff. (min)= 3.14 (ii) 13.05 (ii)

Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.43 0.15 0.555 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.10 43.31  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.40 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5121):	0.70	0.015	4.25	21.74
+ ID2= 2 ( 5122):	3.20	0.555	3.00	43.31
=====				
ID = 3 ( 0118):	3.90	0.557	3.00	39.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0118):	3.90	0.557	3.00	39.44
+ ID2= 2 ( 0512):	4.70	0.160	3.33	27.08
=====				
ID = 3 ( 0119):	8.60	0.674	3.00	32.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0110):	265.30	8.352	3.08	27.55
+ ID2= 2 ( 0119):	8.60	0.674	3.00	32.68
=====				
ID = 3 ( 0120):	273.90	8.783	3.08	27.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 270.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 37.03  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 4.55 (ii) 17.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.06

PEAK FLOW (cms)= 0.50 0.45 0.795 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 19.00 25.82  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.28 0.38

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

CALIB  
 NASHYD ( 6011) Area (ha)= 44.10 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.83

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.881 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 16.500  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.244

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6012) Area (ha)= 11.00  
 ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.08 7.92

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0124)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6011):	44.10	0.881	3.83	16.50
+ ID2= 2 ( 6012):	11.00	0.795	3.00	25.82
=====				
ID = 3 ( 0124):	55.10	1.120	3.50	18.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6021) Area (ha)= 43.60 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.95

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.789 (i)  
 TIME TO PEAK (hrs)= 4.000

RUNOFF VOLUME (mm)= 16.500  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.244

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) Area (ha)= 12.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 38.11  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.77 (ii) 17.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.83 0.49 1.157 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 19.26 28.99  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.28 0.43

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6021): 43.60 0.789 4.00 16.50  
 + ID2= 2 ( 6022): 12.90 1.157 3.00 28.99  
 ID = 3 ( 0125): 56.50 1.292 3.00 19.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0124): 55.10 1.120 3.50 18.36  
 + ID2= 2 ( 0125): 56.50 1.292 3.00 19.35  
 ID = 3 ( 0126): 111.60 2.273 3.00 18.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400

86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ----> <-pipe / channel->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	2.27	3.00	18.86	0.60
OUTFLOW: ID= 1 ( 0603)	111.60	1.51	4.58	18.86	0.55

NASHYD ( 6031) Area (ha)= 19.00 Curve Number (CN)= 72.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.32

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.369 (i)  
 TIME TO PEAK (hrs)= 4.500  
 RUNOFF VOLUME (mm)= 22.428  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.332

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6032) Area (ha)= 15.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.40 11.30  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 51.33  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.06 (ii) 16.40 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.66 0.93 1.290 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.60 31.00  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38 0.46

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 72.0 Ia = Dep. 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 ( 0127)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.369	4.50	22.43
+ ID2= 2 ( 6032):	15.70	1.290	3.00	31.00
=====				
ID = 3 ( 0127):	34.70	1.329	3.00	26.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 6101)  
ID= 1 DT= 5.0 min

Area (ha)= 9.00 Curve Number (CN)= 70.0  
 Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.23

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.279

PEAK FLOW (cms)= 0.173 (i)  
 TIME TO PEAK (hrs)= 4.333  
 RUNOFF VOLUME (mm)= 21.086  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.312

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6102)  
ID= 1 DT= 5.0 min

Area (ha)= 12.10  
 Total Imp(%)= 27.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.27 8.83  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 284.02 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 46.13  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.68 (ii) 16.52 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.54 0.65 0.982 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 23.69 29.76  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60

RUNOFF COEFFICIENT = 0.91 0.35 0.44

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 70.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6101):	9.00	0.173	4.33	21.09
+ ID2= 2 ( 6102):	12.10	0.982	3.00	29.76
=====				
ID = 3 ( 0136):	21.10	1.002	3.00	26.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0127):	34.70	1.329	3.00	26.31
+ ID2= 2 ( 0136):	21.10	1.002	3.00	26.06
=====				
ID = 3 ( 0128):	55.80	2.330	3.00	26.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	55.80	2.330	3.00	26.21
+ ID2= 2 ( 0603):	111.60	1.507	4.58	18.86
=====				
ID = 1 ( 0128):	167.40	2.740	3.00	21.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ROUTE CHN( 0604)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.40	2.74	3.00	21.31	2.01	0.10
OUTFLOW: ID= 1 ( 0604)	167.40	1.78	5.00	21.30	1.84	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	Area (ha)	Ia (mm)	U.H. Tp (hrs)	Curve Number (CN)	# of Linear Res. (N)
NASHYD ( 6041)	1.70	8.00	4.12	79.0	3.00
ID= 1 DT= 5.0 min					

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.017 (i)  
 TIME TO PEAK (hrs)= 7.583  
 RUNOFF VOLUME (mm)= 27.939  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.413

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6042)	22.30	65.00	53.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	14.49	7.81
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	385.57	40.00
Mannings n	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46  
 over (min) = 5.00  
 Storage Coeff. (min)= 5.62 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.20

PEAK FLOW (cms)= 3.25  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 61.60  
 TOTAL RAINFALL (mm)= 67.60  
 RUNOFF COEFFICIENT = 0.91

\*TOTALS\*

1.10  
 3.08  
 33.95  
 67.60  
 0.72

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 79.0 Ia = Dep. 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 ( 6041):	1.70	0.017	7.58	27.94
+ ID2= 2 ( 6042):	22.30	4.162	3.00	48.60
=====				
ID = 3 ( 0129):	24.00	4.162	3.00	47.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0129):	24.00	4.162	3.00	47.14
+ ID2= 2 ( 0604):	167.40	1.776	5.00	21.30
=====				
ID = 3 ( 0130):	191.40	4.946	3.00	24.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700

Main Channel



RUNOFF VOLUME (mm)= 18.645  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.276

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6052) | Area (ha)= 15.50  
 ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.23 5.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 321.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 54.69  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.04 (ii) 16.10 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 /0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 /0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

----- hydrograph ----- <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0132)	218.70	6.05	3.00	26.99	0.66
OUTFLOW: ID= 1 ( 0530)	218.70	4.70	3.08	26.99	0.59

CALIB  
 STANDHYD ( 5302) | Area (ha)= 5.80

PEAK FLOW (cms)= 2.33 0.47 2.651 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 24.02 44.31  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.36 0.66

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0131)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6051): 0.40 0.006 4.50 18.64  
 + ID2= 2 ( 6052): 15.50 2.651 3.00 44.31  
 ID = 3 ( 0131): 15.90 2.652 3.00 43.67

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 ( 0131): 15.90 2.652 3.00 43.67  
 + ID2= 2 ( 0139): 202.80 3.402 3.00 25.68  
 ID = 3 ( 0132): 218.70 6.054 3.00 26.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION ( 350.0) -----

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100

ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.48 2.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 50.94  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 3.75 (ii) 15.13 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.25 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.80 0.20 0.931 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 23.29 41.68  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.34 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

ADD HYD ( 0134)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.70	4.704	3.08	26.99
+ ID2= 2 ( 5302):	5.80	0.931	3.00	41.68
=====				
ID = 3 ( 0134):	224.50	5.214	3.00	27.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.90	8.783	3.08	27.71
+ ID2= 2 ( 0134):	224.50	5.214	3.00	27.37
=====				
ID = 3 ( 0135):	498.40	13.955	3.08	27.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning		
0.00	79.36	0.0900		
7.45	79.32	0.0900		
13.77	79.27	0.0900		
20.24	79.24	0.0900		
27.28	79.26	0.0900		
34.16	79.13	0.0900		
40.79	79.05	0.0900		
47.58	79.05	0.0900		
54.30	79.07	0.0900		
60.87	79.24	0.0900		
71.39	79.48	0.0900		
73.53	78.96	0.0900		
76.96	78.07	0.0900		
82.21	77.08	0.0900 / 0.0700	Main Channel	
85.82	76.28	0.0700	Main Channel	

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

		<---- hydrograph ---->		<-pipe / channel-->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH
	(ha)	(cms)	(hrs)	(mm)	(m)
INFLOW: ID= 2 ( 0135)	498.40	13.96	3.08	27.56	1.84
OUTFLOW: ID= 1 ( 0507)	498.40	11.21	3.33	27.55	1.68
					MAX VEL
					(m/s)
					0.84
					0.79

CALIB		Area (ha)=	8.40	Curve Number (CN)=	74.0
NASHYD ( 5071)	Ia (mm)=	8.00	# of Linear Res. (N)=	3.00	
ID= 1 DT= 5.0 min	U.H. Tp (hrs)=	1.72			

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.187

PEAK FLOW (cms)= 0.142 (i)  
 TIME TO PEAK (hrs)= 5.000  
 RUNOFF VOLUME (mm)= 23.865  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.353

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		Area (ha)=	40.50
STANDHYD ( 5072)	Total Imp(%)=	45.00	Dir. Conn.(%)= 30.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	18.23	22.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	519.62	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06

0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 73.24  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 6.72 (ii) 16.56 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

\*TOTALS\*

PEAK FLOW (cms)= 3.24 2.22 4.780 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 28.60 38.50  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.42 0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 74.0 Ia = Dep. 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 ( 0121)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5071):	8.40	0.142	5.00	23.86
+ ID2= 2 ( 5072):	40.50	4.780	3.00	38.50
=====				
ID = 3 ( 0121):	48.90	4.790	3.00	35.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.











All rights reserved.

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voind.dat

Output filename: C:\Users\jannaormond\AppData\Local\Civica\... 81d6ea6a-7e73-4b58-bdc9-67b74e8d5488\

DATE: 04-10-2024 TIME: 01:16:45

USER:

COMMENTS:

\*\* SIMULATION : 25yrII6.stm \*\*

READ STORM File: C:\Users\jannaormond\AppData\Local\Temp\... ec528c0d-4c97-4ad9-80b7-e31bdfec4424\... Ptotal= 81.60 mm

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall data at various time intervals.

Surface Area (ha)= 14.97 24.43
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 512.51 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data.

Max. Eff. Inten. (mm/hr)= 127.30 73.75
Storage Coeff. (min)= 5.00 20.00
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.19 0.07
PEAK FLOW (cms)= 3.09 2.48
TIME TO PEAK (hrs)= 3.00 3.17
RUNOFF VOLUME (mm)= 75.60 30.20
TOTAL RAINFALL (mm)= 81.60 81.60
RUNOFF COEFFICIENT = 0.93 0.37

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 65.0 Ia = Dep. 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 NASHYD ( 5011) Area (ha)= 80.20 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data.

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 2.505 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 25.750
TOTAL RAINFALL (mm)= 81.600
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 5012) Area (ha)= 39.40
ID= 1 DT= 5.0 min Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)

ADD HYD ( 0100)
1 + 2 = 3
ID1= 1 ( 5011): 80.20 2.505 3.83 25.75
+ ID2= 2 ( 5012): 39.40 4.800 3.00 41.09
ID = 3 ( 0100): 119.60 5.365 3.00 30.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

Table with 4 columns: Distance, Elevation, Manning, Velocity. Rows show data for section (1537.5).

Table with 6 columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Rows show travel time table data.

0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.662  
 PEAK FLOW (cms)= 0.477 (i)  
 TIME TO PEAK (hrs)= 4.667  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

		<---- hydrograph ---->			<-pipe / channel->		
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0100)	119.60	5.36	3.00	30.80	1.14	0.60	
OUTFLOW: ID= 1 ( 0502)	119.60	3.82	3.83	30.80	1.05	0.73	

CALIB	Area (ha)= 25.90
STANDHYD ( 5022)	Total Imp(%)= 42.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)= 30.00

		IMPERVIOUS		PERVIOUS (i)	
Surface Area	(ha)=	10.88	15.02		
Dep. Storage	(mm)=	6.00	8.00		
Average Slope	(%)=	1.00	1.00		
Length	(m)=	415.53	40.00		
Mannings n	=	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB	Area (ha)= 25.20	Curve Number (CN)= 62.0
NASHYD ( 5021)	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 1.46	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	55.66	
over (min)	5.00	20.00	
Storage Coeff. (min)	5.45 (ii)	16.44 (ii)	
Unit Hyd. Tpeak (min)	5.00	20.00	
Unit Hyd. peak (cms)	0.20	0.06	
PEAK FLOW (cms)=	2.59	1.35	3.503 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	75.60	27.56	41.97
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.34	0.51

\*TOTALS\*

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

ADD HYD ( 0101)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5021):	25.20	0.477	4.67	23.63
+ ID2= 2 ( 5022):	25.90	3.503	3.00	41.97
ID= 3 ( 0101):	51.10	3.548	3.00	32.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):	51.10	3.548	3.00	32.92
+ ID2= 2 ( 0502):	119.60	3.820	3.83	30.80
ID= 3 ( 0102):	170.70	5.539	3.00	31.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)	
IN= 2--> OUT= 1	Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

		<---- hydrograph ---->			<-pipe / channel->		
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0102)	170.70	5.54	3.00	31.44	1.25	1.08	
OUTFLOW: ID= 1 ( 0503)	170.70	5.15	3.33	31.44	1.22	1.06	

```

CALIB
NASHYD ( 5031) Area (ha)= 1.70 Curve Number (CN)= 71.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.82

```

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.079

```

PEAK FLOW (cms)= 0.065 (i)
TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 30.543
TOTAL RAINFALL (mm)= 81.600
RUNOFF COEFFICIENT = 0.374

```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

CALIB
STANDHYD ( 5032) Area (ha)= 12.20
ID= 1 DT= 5.0 min Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00

```

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

ADD HYD ( 0103)
1 + 2 = 3

```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5031):	1.70	0.065	3.83	30.54
+ ID2= 2 ( 5032):	12.20	2.582	3.00	54.89
=====				
ID = 3 ( 0103):	13.90	2.598	3.00	51.92

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 ( 0103):	13.90	2.598	3.00	51.92
+ ID2= 2 ( 0503):	170.70	5.155	3.33	31.44
=====				
ID = 3 ( 0104):	184.60	7.120	3.00	32.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ROUTE CHN( 0504)
IN= 2----> OUT= 1 Routing time step (min)= 5.00

```

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 7.20 5.00
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 285.19 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

```

Max.Eff.Inten.(mm/hr)= 127.30 94.01
over (min)= 5.00 15.00
Storage Coeff. (min)= 4.35 (ii) 13.26 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.23 0.08

```

\*TOTALS\*

```

PEAK FLOW (cms)= 1.96 0.75 2.582 (iii)
TIME TO PEAK (hrs)= 3.00 3.00 3.00
RUNOFF VOLUME (mm)= 75.60 36.53 54.89
TOTAL RAINFALL (mm)= 81.60 81.60 81.60
RUNOFF COEFFICIENT = 0.93 0.45 0.67

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

```

526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

<--- TRAVEL TIME TABLE --->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
INFLOW: ID= 2 ( 0104) 184.60 7.12 3.00 32.98 0.80 0.33
OUTFLOW: ID= 1 ( 0504) 184.60 5.80 3.42 32.98 0.76 0.33

```

```

CALIB
NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.89

```

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90

0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.010 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 28.042  
 TOTAL RAINFALL (mm) = 81.600  
 RUNOFF COEFFICIENT = 0.344

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5042)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 7.40  
 Total Imp(%) = 66.00 Dir. Conn.(%) = 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 4.88 2.52  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 222.11 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90

0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 93.86  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 3.74 (ii) 12.66 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.25 0.08

PEAK FLOW (cms) = 1.38 0.38  
 TIME TO PEAK (hrs) = 3.00 3.08  
 RUNOFF VOLUME (mm) = 75.60 34.92  
 TOTAL RAINFALL (mm) = 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43

\*TOTALS\*

1.699 (iii)

3.00

56.89

81.60

0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5041): 0.30 0.010 3.92 28.04  
 + ID2= 2 ( 5042): 7.40 1.699 3.00 56.89  
 ID = 3 ( 0105): 7.70 1.702 3.00 55.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0105): 7.70 1.702 3.00 55.76  
 + ID2= 2 ( 0504): 184.60 5.799 3.42 32.98  
 ID = 3 ( 0106): 192.30 6.202 3.33 33.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5201)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 22.80 Curve Number (CN) = 72.0  
 Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.31

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms) = 0.663

PEAK FLOW (cms) = 0.628 (i)  
 TIME TO PEAK (hrs) = 4.417  
 RUNOFF VOLUME (mm) = 31.425  
 TOTAL RAINFALL (mm) = 81.600  
 RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5202)  
 ID= 1 DT= 5.0 min  
 Area (ha) = 6.90  
 Total Imp(%) = 23.00 Dir. Conn.(%) = 12.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 1.59 5.31  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 214.48 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 79.10  
 over (min) = 5.00 15.00  
 Storage Coeff. (min) = 3.67 (ii) 13.21 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 15.00  
 Unit Hyd. peak (cms) = 0.25 0.08

PEAK FLOW (cms) = 0.29 0.66  
 TIME TO PEAK (hrs) = 3.00 3.08  
 RUNOFF VOLUME (mm) = 75.60 34.56  
 TOTAL RAINFALL (mm) = 81.60 81.60

\*TOTALS\*

0.837 (iii)

3.00

39.48

81.60

RUNOFF COEFFICIENT = 0.93 0.42 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD ( 0111), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows include ID1=1, ID2=2, and ID=3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0521)
IN= 2--> OUT= 1
Routing time step (min)'= 5.00

DATA FOR SECTION ( 815.4)
Table with columns: Distance, Elevation, Manning, Main Channel.

TRAVEL TIME TABLE
Table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min).

Table with columns: 1.417, 4.90, 2.917, 127.30, 4.417, 6.53, 5.92, 3.26, 1.500, 4.90, 3.000, 127.30, 4.500, 6.53, 6.00, 3.26

Unit Hyd Qpeak (cms)= 0.076
PEAK FLOW (cms)= 0.078 (i)
TIME TO PEAK (hrs)= 4.000
RUNOFF VOLUME (mm)= 36.240
TOTAL RAINFALL (mm)= 81.600
RUNOFF COEFFICIENT = 0.444

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
STANDHYD ( 5212)
ID= 1 DT= 5.0 min
Area (ha)= 13.80
Total Imp(%)= 52.00 Dir. Conn.(%)= 40.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 7.18 6.62
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 303.32 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH
Table with columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Table with columns: 0.37, 83.32, .510E+04, 3.2, 0.34, 26.44, 0.42, 83.37, .713E+04, 5.0, 0.38, 23.61, 0.46, 83.42, .934E+04, 7.3, 0.42, 21.44, 0.51, 83.47, .121E+05, 10.0, 0.45, 20.23, 0.56, 83.52, .156E+05, 13.4, 0.47, 19.44, 0.61, 83.57, .196E+05, 17.7, 0.49, 18.52, 0.66, 83.61, .240E+05, 22.8, 0.52, 17.49, 0.71, 83.66, .286E+05, 28.4, 0.54, 16.75, 0.75, 83.71, .336E+05, 34.7, 0.56, 16.14, 0.80, 83.76, .390E+05, 41.8, 0.58, 15.55, 0.85, 83.81, .448E+05, 49.8, 0.60, 14.99, 0.90, 83.86, .510E+05, 58.8, 0.63, 14.46

hydrograph
AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s)
INFLOW: ID= 2 ( 0111) 29.70 0.91 3.00 33.30 0.27 0.33
OUTFLOW: ID= 1 ( 0521) 29.70 0.71 4.58 33.28 0.25 0.32

CALIB
NASHYD ( 5211)
ID= 1 DT= 5.0 min
Area (ha)= 1.90 Curve Number (CN)= 77.0
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.95

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH
Table with columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Max.Eff.Inten.(mm/hr)= 127.30 103.56
over (min)= 5.00 15.00
Storage Coeff. (min)= 4.51 (ii) 13.08 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.23 0.08
PEAK FLOW (cms)= 1.88 1.11 2.816 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 75.60 41.61 55.21
TOTAL RAINFALL (mm)= 81.60 81.60 81.60
RUNOFF COEFFICIENT = 0.93 0.51 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 77.0 Ia = Dep. 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 ( 5211): 1.90 0.078 4.00 36.24
+ ID2= 2 ( 5212): 13.80 2.816 3.00 55.21
ID= 3 ( 0112): 15.70 2.832 3.00 52.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)
1 + 2 = 3
AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm)
ID1= 1 ( 0112): 15.70 2.832 3.00 52.91
+ ID2= 2 ( 0521): 29.70 0.709 4.58 33.28
ID= 3 ( 0113): 45.40 3.127 3.00 40.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)
1 + 2 = 3
AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm)

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0106):	192.30	6.202	3.33	33.89
+ ID2= 2 ( 0113):	45.40	3.127	3.00	40.07
-----				
ID = 3 ( 0114):	237.70	8.852	3.00	35.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 / 0.0900
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900
501.51	83.16	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74

PEAK FLOW (cms)= 0.056 (i)  
TIME TO PEAK (hrs)= 3.583  
RUNOFF VOLUME (mm)= 28.047  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.344

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5052) | Area (ha)= 14.60  
| ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	9.64	4.96
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	311.98	40.00
Mannings n =	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 93.86  
over (min) 5.00 15.00  
Storage Coeff. (min)= 4.59 (ii) 13.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00

1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0114)	237.70	8.85	3.00	35.07	0.69	0.51
OUTFLOW: ID= 1 ( 0505)	237.70	8.26	3.08	35.07	0.66	0.49

CALIB  
NASHYD ( 5051) | Area (ha)= 1.30 Curve Number (CN)= 68.0  
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.62

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.080

Unit Hyd. peak (cms)= 0.23 0.08  
\*TOTALS\*  
PEAK FLOW (cms)= 2.68 0.73 3.288 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 34.92 56.89  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.43 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 5051): 1.30 0.056 3.58 28.05  
+ ID2= 2 ( 5052): 14.60 3.288 3.00 56.89  
-----  
ID = 3 ( 0107): 15.90 3.307 3.00 54.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)  
1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 0107): 15.90 3.307 3.00 54.53  
+ ID2= 2 ( 0505): 237.70 8.257 3.08 35.07  
-----  
ID = 3 ( 0108): 253.60 10.593 3.00 36.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900

45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

TRAVEL TIME TABLE					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<--- hydrograph --->						
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0108)	253.60	10.59	3.00	36.29	1.59	1.15
OUTFLOW : ID= 1 ( 0506)	253.60	9.88	3.08	36.29	1.56	1.18

```

CALIB
NASHYD ( 5061) Area (ha)= 3.90 Curve Number (CN)= 71.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.62
  
```

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.183 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 30.544  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.374

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

CALIB
STANDHYD ( 5062) Area (ha)= 7.80
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00
  
```

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 99.84  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.80 (ii) 12.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.43 0.45 1.801 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 37.42 57.66  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.46 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109)
1 + 2 = 3 AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 5061): 3.90 0.183 3.58 30.54
+ ID2= 2 ( 5062): 7.80 1.801 3.00 57.66
=====
ID = 3 ( 0109): 11.70 1.866 3.00 48.62
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ADD HYD ( 0110)
1 + 2 = 3 AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0109): 11.70 1.866 3.00 48.62
+ ID2= 2 ( 0506): 253.60 9.885 3.08 36.29
=====
ID = 3 ( 0110): 265.30 10.960 3.08 36.83
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

CALIB
NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 1.42
  
```

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26

1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Unit Hyd Qpeak (cms) = 0.022

PEAK FLOW (cms) = 0.017 (i)  
 TIME TO PEAK (hrs) = 4.583  
 RUNOFF VOLUME (mm) = 26.492  
 TOTAL RAINFALL (mm) = 81.600  
 RUNOFF COEFFICIENT = 0.325

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5102) | Area (ha) = 0.90  
 ID= 1 DT= 5.0 min | Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.45 0.45  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 77.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26

1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.58  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 1.99 (ii) 11.33 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*

PEAK FLOW (cms) = 0.11 0.06 0.164 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.08 3.00  
 RUNOFF VOLUME (mm) = 75.60 32.32 47.46  
 TOTAL RAINFALL (mm) = 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.40 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5101): 0.80 0.017 4.58 26.49  
 + ID2= 2 ( 5102): 0.90 0.164 3.00 47.46  
 ID = 3 ( 0115): 1.70 0.166 3.00 37.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0511)  
 IN= 2--- OUT= 1 | Routing time step (min) = 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100 / 0.0700 Main Channel
69.13	79.02	0.0700 Main Channel
92.42	79.04	0.0700 Main Channel
98.70	80.89	0.0700 / 0.1100 Main Channel

128.88 81.13 0.1100  
 199.00 81.23 0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<--- hydrograph ---> <--- pipe / channel --->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0115) | 1.70 0.17 3.00 37.59 0.03 0.24  
 OUTFLOW: ID= 1 ( 0511) | 1.70 0.12 3.08 37.59 0.02 0.24

CALIB  
 NASHYD ( 5111) | Area (ha) = 1.90 Curve Number (CN) = 67.0  
 ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.56

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90

0.333 3.26 | 1.833 8.16 | 3.333 17.95 | 4.83 4.90  
 0.417 3.26 | 1.917 8.16 | 3.417 17.95 | 4.92 4.90  
 0.500 3.26 | 2.000 8.16 | 3.500 17.95 | 5.00 4.90  
 0.583 4.90 | 2.083 9.79 | 3.583 8.16 | 5.08 3.26  
 0.667 4.90 | 2.167 9.79 | 3.667 8.16 | 5.17 3.26  
 0.750 4.90 | 2.250 9.79 | 3.750 8.16 | 5.25 3.26  
 0.833 4.90 | 2.333 9.79 | 3.833 8.16 | 5.33 3.26  
 0.917 4.90 | 2.417 9.79 | 3.917 8.16 | 5.42 3.26  
 1.000 4.90 | 2.500 9.79 | 4.000 8.16 | 5.50 3.26  
 1.083 4.90 | 2.583 48.96 | 4.083 6.53 | 5.58 3.26  
 1.167 4.90 | 2.667 48.96 | 4.167 6.53 | 5.67 3.26  
 1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Unit Hyd Qpeak (cms) = 0.129

PEAK FLOW (cms) = 0.085 (i)  
 TIME TO PEAK (hrs) = 3.500  
 RUNOFF VOLUME (mm) = 27.260  
 TOTAL RAINFALL (mm) = 81.600  
 RUNOFF COEFFICIENT = 0.334

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5112) | Area (ha) = 1.10  
 ID= 1 DT= 5.0 min | Total Imp(%) = 50.00 Dir. Conn.(%) = 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 0.55 0.55  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 85.63 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90



0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 94.85  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.11 (ii) 10.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.14 0.09 0.211 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 36.66 50.28  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.45 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0116)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5111):	1.90	0.085	3.50	27.26
+ ID2= 2 ( 5112):	1.10	0.211	3.00	50.28
=====				
ID = 3 ( 0116):	3.00	0.245	3.00	35.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ADD HYD ( 0117) |

1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0116):	3.00	0.245	3.00	35.70
+ ID2= 2 ( 0511):	1.70	0.120	3.08	37.59
=====				
ID = 3 ( 0117):	4.70	0.360	3.00	36.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0512) |  
| IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->				
Distance	Elevation	Manning		
0.00	80.80	0.0900		
9.73	80.46	0.0900		
14.10	82.04	0.0900		
17.18	82.28	0.0900		
41.13	82.12	0.0900 / 0.0700	Main Channel	
46.88	79.71	0.0700	Main Channel	
51.41	80.90	0.0700 / 0.0900	Main Channel	
94.29	80.56	0.0900		
175.64	80.72	0.0900		
192.09	80.85	0.0900		

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ----> <-pipe / channel-->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0117)	4.70	0.36	3.00	36.39	0.55	0.37
OUTFLOW: ID= 1 ( 0512)	4.70	0.22	3.33	36.38	0.46	0.32

CALIB		Area (ha)= 0.70		Curve Number (CN)= 71.0	
NASHYD ( 5121)		Ia (mm)= 8.00		# of Linear Res.(N)= 3.00	
ID= 1 DT= 5.0 min		U.H. Tp(hrs)= 1.14			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95
0.167	3.26	1.667	8.16	3.167	17.95
0.250	3.26	1.750	8.16	3.250	17.95
0.333	3.26	1.833	8.16	3.333	17.95
0.417	3.26	1.917	8.16	3.417	17.95
0.500	3.26	2.000	8.16	3.500	17.95
0.583	4.90	2.083	9.79	3.583	8.16
0.667	4.90	2.167	9.79	3.667	8.16
0.750	4.90	2.250	9.79	3.750	8.16
0.833	4.90	2.333	9.79	3.833	8.16
0.917	4.90	2.417	9.79	3.917	8.16
1.000	4.90	2.500	9.79	4.000	8.16
1.083	4.90	2.583	48.96	4.083	6.53
1.167	4.90	2.667	48.96	4.167	6.53
1.250	4.90	2.750	88.13	4.250	6.53
1.333	4.90	2.833	88.13	4.333	6.53
1.417	4.90	2.917	127.30	4.417	6.53
1.500	4.90	3.000	127.30	4.500	6.53

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.021 (i)  
TIME TO PEAK (hrs)= 4.250  
RUNOFF VOLUME (mm)= 30.541  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.374

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		Area (ha)= 3.20		Total Imp(%)= 60.00	
STANDHYD ( 5122)		Dir. Conn.(%)= 47.00			
ID= 1 DT= 5.0 min					

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.92	1.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	146.06	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----					
TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95
0.167	3.26	1.667	8.16	3.167	17.95
0.250	3.26	1.750	8.16	3.250	17.95
0.333	3.26	1.833	8.16	3.333	17.95
0.417	3.26	1.917	8.16	3.417	17.95
0.500	3.26	2.000	8.16	3.500	17.95
0.583	4.90	2.083	9.79	3.583	8.16
0.667	4.90	2.167	9.79	3.667	8.16
0.750	4.90	2.250	9.79	3.750	8.16
0.833	4.90	2.333	9.79	3.833	8.16
0.917	4.90	2.417	9.79	3.917	8.16
1.000	4.90	2.500	9.79	4.000	8.16
1.083	4.90	2.583	48.96	4.083	6.53
1.167	4.90	2.667	48.96	4.167	6.53
1.250	4.90	2.750	88.13	4.250	6.53
1.333	4.90	2.833	88.13	4.333	6.53
1.417	4.90	2.917	127.30	4.417	6.53
1.500	4.90	3.000	127.30	4.500	6.53

Max.Eff.Inten.(mm/hr)= 127.30 97.76  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.91 (ii) 11.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.28 0.09

PEAK FLOW (cms)= 0.53 0.21 0.703 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 37.11 55.20  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.45 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0118)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5121):	0.70	0.021	4.25	30.54
+ ID2= 2 ( 5122):	3.20	0.703	3.00	55.20
=====				
ID = 3 ( 0118):	3.90	0.706	3.00	50.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0118):	3.90	0.706	3.00	50.77
+ ID2= 2 ( 0512):	4.70	0.220	3.33	36.38
=====				
ID = 3 ( 0119):	8.60	0.870	3.00	42.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0110):	265.30	10.960	3.08	36.83
+ ID2= 2 ( 0119):	8.60	0.870	3.00	42.91
=====				
ID = 3 ( 0120):	273.90	11.531	3.08	37.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)	Curve Number (CN)=	62.0
NASHYD ( 6011)	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp	(hrs)=	0.83	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.276 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area	(ha)	Curve Number (CN)=	62.0
STANDHYD ( 6012)	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp	(hrs)=	0.83	

IMPERVIOUS (i)  
 Surface Area (ha)= 3.08 7.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 270.80 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max. Eff. Inten. (mm/hr)= 127.30 52.38  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 4.22 (ii) 15.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.60 0.69 1.070 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 26.83 34.64  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.33 0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)

ID1= 1 ( 6011):	Area	(ha)	Curve Number (CN)=	62.0
+ ID2= 2 ( 6012):	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
ID = 3 ( 0124):	U.H. Tp	(hrs)=	0.95	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)	Curve Number (CN)=	62.0
NASHYD ( 6021)	Ia	(mm)=	8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp	(hrs)=	0.95	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.141 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6022) Area (ha)= 12.90  
ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.51 8.38  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 293.26 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 53.84  
over (min)= 5.00 20.00  
Storage Coeff.(min)= 4.42 (ii) 15.55 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.07

PEAK FLOW (cms)= 1.01 0.74 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.17 1.520 (iii)  
RUNOFF VOLUME (mm)= 75.60 27.16 38.30  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.33 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0125)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0021):	43.60	1.141	4.00	23.63
+ ID2= 2 ( 6022):	12.90	1.520	3.00	38.30
ID = 3 ( 0125):	56.50	1.733	3.00	26.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	1.597	3.50	25.82
+ ID2= 2 ( 0125):	56.50	1.733	3.00	26.98
ID = 3 ( 0126):	111.60	3.093	3.00	26.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400

161.87 90.11 0.1400  
177.03 90.04 0.1400  
188.67 89.87 0.1400  
199.59 90.31 0.1400  
212.02 90.96 0.1400  
225.58 91.35 0.1400  
252.71 91.66 0.1400  
274.11 91.86 0.1400

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	3.09	3.00	26.41	0.65	0.23
OUTFLOW: ID= 1 ( 0603)	111.60	2.16	4.58	26.40	0.59	0.22

CALIB  
NASHYD ( 6031) Area (ha)= 19.00 Curve Number (CN)= 72.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.32

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
0.083	3.26	1.583	8.16	3.083	17.95
0.167	3.26	1.667	8.16	3.167	17.95
0.250	3.26	1.750	8.16	3.250	17.95
0.333	3.26	1.833	8.16	3.333	17.95
0.417	3.26	1.917	8.16	3.417	17.95
0.500	3.26	2.000	8.16	3.500	17.95
0.583	4.90	2.083	9.79	3.583	8.16
0.667	4.90	2.167	9.79	3.667	8.16
0.750	4.90	2.250	9.79	3.750	8.16
0.833	4.90	2.333	9.79	3.833	8.16
0.917	4.90	2.417	9.79	3.917	8.16
1.000	4.90	2.500	9.79	4.000	8.16
1.083	4.90	2.583	48.96	4.083	6.53
1.167	4.90	2.667	48.96	4.167	6.53
1.250	4.90	2.750	88.13	4.250	6.53
1.333	4.90	2.833	88.13	4.333	6.53
1.417	4.90	2.917	127.30	4.417	6.53
1.500	4.90	3.000	127.30	4.500	6.53

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.522 (i)  
TIME TO PEAK (hrs)= 4.417  
RUNOFF VOLUME (mm)= 31.425  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6032) Area (ha)= 15.70  
ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.40 11.30  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 323.52 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.39  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.69 (ii) 14.04 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.80 1.45 2.002 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 35.32 41.36  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.43 0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0127)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6031):	19.00	0.522	4.42	31.42
+ ID2= 2 ( 6032):	15.70	2.002	3.00	41.36

=====

ID = 3 ( 0127): 34.70 2.064 3.00 35.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6101)	9.00	70.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.23	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.279

PEAK FLOW (cms)= 0.246 (i)  
TIME TO PEAK (hrs)= 4.333  
RUNOFF VOLUME (mm)= 29.689  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.364

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)
STANDHYD ( 6102)	12.10

|ID= 1 DT= 5.0 min | Total Imp(%)= 27.00 Dir. Conn.(%)= 16.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.27	8.83
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	284.02	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 75.81  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.34 (ii) 14.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.66 1.03 1.506 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 32.92 39.75  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.40 0.49

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 70.0 Ia = Dep. 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 ( 6101):	9.00	0.246	4.33	29.69
+ ID2= 2 ( 6102):	12.10	1.506	3.00	39.75
ID = 3 ( 0136):	21.10	1.538	3.00	35.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0127):	34.70	2.064	3.00	35.92
+ ID2= 2 ( 0136):	21.10	1.538	3.00	35.46
ID = 3 ( 0128):	55.80	3.601	3.00	35.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	55.80	3.601	3.00	35.75
+ ID2= 2 ( 0603):	111.60	2.157	4.58	26.40
ID = 1 ( 0128):	167.40	4.157	3.00	29.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)	Routing time step (min)
IN= 2---> OUT= 1	5.00

<----- DATA FOR SECTION (1414.9) ----->		
Distance	Elevation	Manning
0.00	86.75	0.0900

3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB			
NASHYD ( 6041)	Area (ha)=	1.70	Curve Number (CN)= 79.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 4.12			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	121.59
1.41	85.19	.469E+04	0.6	0.09	126.63
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.023 (i)  
 TIME TO PEAK (hrs)= 7.500  
 RUNOFF VOLUME (mm)= 38.381  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.470

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<---- hydrograph ----> <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0128)	167.40	4.16	3.00	29.52	2.24	0.09
OUTFLOW: ID= 1 ( 0604)	167.40	2.52	5.00	29.51	1.97	0.09

CALIB			
STANDHYD ( 6042)	Area (ha)=	22.30	
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)= 53.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.49	7.81
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	385.57	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 120.63  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.21 (ii) 13.27 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.96 1.54 5.266 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 45.44 61.42  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.56 0.75

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 79.0 Ia = Dep. Storage (Aequal)
- (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	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6041):	1.70	0.023	7.50	38.38
+ ID2= 2 ( 6042):	22.30	5.266	3.00	61.42
=====				
ID = 3 ( 0129):	24.00	5.267	3.00	59.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0129):	24.00	5.267	3.00	59.79
+ ID2= 2 ( 0604):	167.40	2.519	5.00	29.51
=====				
ID = 3 ( 0130):	191.40	6.444	3.00	33.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)	
IN= 2----> OUT= 1	Routing time step (min)= 5.00

----- DATA FOR SECTION ( 801.4) -----

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100

336.56 82.53 0.1100  
404.40 82.68 0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

----- hydrograph ----- <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0130)	191.40	6.44	3.00	33.30	1.05	0.35
OUTFLOW : ID= 1 ( 0605)	191.40	2.88	3.50	33.30	0.88	0.28

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6111)	0.60	77.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.08	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90

0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	106.59
over (min)	5.00	15.00
Storage Coeff. (min)=	4.19 (ii)	12.66 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.24	0.08

*TOTALS*			
PEAK FLOW (cms)=	1.85	0.72	2.456 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	75.60	40.78	58.19
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.50	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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 ( 0137)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6111):	0.60	0.022	4.08	36.24
+ ID2= 2 ( 6112):	10.80	2.456	3.00	58.19
ID = 3 ( 0137):	11.40	2.460	3.00	57.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)

0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)=	0.022 (i)
TIME TO PEAK (hrs)=	4.083
RUNOFF VOLUME (mm)=	36.237
TOTAL RAINFALL (mm)=	81.600
RUNOFF COEFFICIENT =	0.444

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6112)	10.80	50.00
ID= 1 DT= 5.0 min	Total Imp(%)= 62.00	

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)=	6.70	4.10
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	268.33	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0137):	11.40	2.460	3.00	57.03
+ ID2= 2 ( 0605):	191.40	2.885	3.50	33.30
ID = 3 ( 0139):	202.80	4.471	3.00	34.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6051)	0.40	66.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 1.31	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)=	0.009 (i)
TIME TO PEAK (hrs)=	4.417
RUNOFF VOLUME (mm)=	26.488
TOTAL RAINFALL (mm)=	81.600
RUNOFF COEFFICIENT =	0.325

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6052) Area (ha)= 15.50  
ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 10.23 5.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 321.46 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 89.28  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.67 (ii) 13.77 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 2.84 0.73 3.443 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 33.23 56.11  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.41 0.69

118.05 78.63 0.0700 Main Channel  
124.40 78.89 0.0700 /0.1100 Main Channel  
132.18 79.61 0.1100  
139.34 79.23 0.1100  
144.67 79.43 0.1100  
149.63 79.98 0.1100  
153.42 79.79 0.1100  
158.56 80.58 0.1100  
176.89 81.15 0.1100

----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0132)	218.70	7.92	3.00	36.15	0.75	0.72
OUTFLOW: ID= 1 ( 0530)	218.70	6.18	3.08	36.14	0.66	0.68

CALIB  
STANDHYD ( 5302) Area (ha)= 5.80  
ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.48 2.32  
Dep. Storage (mm)= 6.00 8.00

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131)  
1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0051):	0.40	0.009	4.42	26.49
+ ID2= 2 ( 0052):	15.50	3.443	3.00	56.11
ID = 3 ( 0131):	15.90	3.445	3.00	55.36

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 ( 0131):	15.90	3.445	3.00	55.36
+ ID2= 2 ( 0139):	202.80	4.471	3.00	34.64
ID = 3 ( 0132):	218.70	7.916	3.00	36.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 /0.0700 Main Channel

Average Slope (%)= 1.00 1.00  
Length (m)= 196.64 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.58  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.48 (ii) 12.82 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.97 0.31 1.223 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 32.32 53.09  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.40 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530):	218.70	6.182	3.08	36.14
+ ID2= 2 ( 5302):	5.80	1.223	3.00	53.09
=====				
ID = 3 ( 0134):	224.50	6.866	3.00	36.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120):	273.90	11.531	3.08	37.02
+ ID2= 2 ( 0134):	224.50	6.866	3.00	36.58
=====				
ID = 3 ( 0135):	498.40	18.359	3.08	36.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)	
IN= 2--> OUT= 1	Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->				
Distance	Elevation	Manning		
0.00	79.36	0.0900		
7.45	79.32	0.0900		
13.77	79.27	0.0900		
20.24	79.24	0.0900		
27.28	79.26	0.0900		
34.16	79.13	0.0900		
40.79	79.05	0.0900		
47.58	79.05	0.0900		
54.30	79.07	0.0900		
60.87	79.24	0.0900		
71.39	79.48	0.0900		
73.53	78.96	0.0900		
76.96	78.07	0.0900		
82.21	77.08	0.0900 / 0.0700	Main Channel	
85.82	76.28	0.0700	Main Channel	
89.97	76.89	0.0700	Main Channel	
91.35	77.38	0.0700 / 0.0900	Main Channel	
95.27	78.68	0.0900		
98.44	79.63	0.0900		
102.89	79.89	0.0900		

0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.187

PEAK FLOW (cms)= 0.200 (i)  
 TIME TO PEAK (hrs)= 4.917  
 RUNOFF VOLUME (mm)= 33.264  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.408

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 5072)	Area (ha)= 40.50	Total Imp(%)= 45.00	Dir. Conn.(%)= 30.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	18.23	22.28	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	519.62	40.00	
Mannings n	0.013	0.250	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26

<----- TRAVEL TIME TABLE ----->						
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)	
0.16	76.44	.113E+03	0.0	0.14	88.10	
0.32	76.60	.451E+03	0.1	0.23	55.50	
0.49	76.76	.101E+04	0.4	0.30	42.35	
0.65	76.92	.180E+04	0.9	0.37	34.57	
0.81	77.09	.276E+04	1.6	0.44	28.86	
0.97	77.25	.388E+04	2.7	0.52	24.37	
1.14	77.41	.516E+04	4.0	0.59	21.56	
1.30	77.57	.660E+04	5.7	0.66	19.26	
1.46	77.74	.822E+04	7.8	0.72	17.67	
1.62	77.90	.100E+05	10.1	0.77	16.48	
1.79	78.06	.120E+05	12.8	0.82	15.54	
1.95	78.22	.141E+05	15.9	0.87	14.74	
2.11	78.39	.163E+05	19.4	0.91	14.06	
2.27	78.55	.187E+05	23.2	0.95	13.47	
2.44	78.71	.212E+05	27.3	0.99	12.95	
2.60	78.87	.239E+05	31.9	1.02	12.50	
2.76	79.04	.267E+05	36.8	1.06	12.10	
2.92	79.20	.320E+05	39.4	0.94	13.56	
3.09	79.36	.409E+05	45.7	0.85	14.94	

		<---- hydrograph ---->			<-pipe / channel->	
INFLOW : ID= 2 ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
498.40	18.36	3.08	36.83	2.06	0.90	
OUTFLOW: ID= 1 ( 0507)	498.40	15.13	3.33	36.83	1.90	0.85

CALIB			
NASHYD ( 5071)	Area (ha)= 8.40	Curve Number (CN)= 74.0	
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
U.H. Tp(hrs)= 1.72			

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90

0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 98.85  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 6.23 (ii) 14.96 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.19 0.08

PEAK FLOW (cms)= 3.97 3.34 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 6.746 (iii)  
 RUNOFF VOLUME (mm)= 75.60 39.00 49.98  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.48 0.61

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.0 Ia = Dep. 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 ( 0121)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5071):	8.40	0.200	4.92	33.26
+ ID2= 2 ( 5072):	40.50	6.746	3.00	49.98
=====				
ID = 3 ( 0121):	48.90	6.761	3.00	47.11

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 ( 0121):	48.90	6.761	3.00	47.11











835a5713-6709-4f67-9310-4f0baf9b2882\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\860df144-956f-4cfc-88fc-f31f1a71e94a\  
 835a5713-6709-4f67-9310-4f0baf9b2882\

DATE: 04-10-2024 TIME: 01:16:47

USER:

COMMENTS:

\*\*\*\*\*  
 \*\* SIMULATION : 2yr116.stm \*\*  
 \*\*\*\*\*

READ STORM File: C:\Users\jannaormond\AppData\Local\Temp\ec528c0d-4c97-4ad9-80b7-e31bdfec4424\60beea3  
 Ptotal= 40.03 mm Comments: Mount Hope-6 hour SCS Distribution Desig

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	1.59	1.50	3.97	3.00	8.73	4.50	2.38
0.17	1.59	1.67	3.97	3.17	8.73	4.67	3.38
0.33	1.59	1.83	3.97	3.33	8.73	4.83	3.38
0.50	2.38	2.00	4.76	3.50	3.97	5.00	1.59
0.67	2.38	2.17	4.76	3.67	3.97	5.17	1.59
0.83	2.38	2.33	4.76	3.83	3.97	5.33	1.59
1.00	2.38	2.50	23.82	4.00	3.18	5.50	1.59
1.17	2.38	2.67	42.88	4.17	3.18	5.67	1.59
1.33	2.38	2.83	61.93	4.33	3.18	5.83	1.59

CALIB ( 5011) Area (ha)= 80.20 Curve Number (CN)= 65.0  
 NASHYD ( 5012) Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 ID= 1 DT= 5.0 min U.H. Tp(hrs)= 0.85

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 0.550 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 6.078  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.152

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB ( 5012) Area (ha)= 39.40  
 STANDHYD ( 5012) Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00  
 ID= 1 DT= 5.0 min

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.97	24.43
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	512.51	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93 13.05  
 over (min) 10.00 30.00  
 Storage Coeff. (min)= 8.25 (ii) 27.87 (ii)  
 Unit Hyd. Tpeak (min)= 10.00 30.00  
 Unit Hyd. peak (cms)= 0.13 0.04  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.32 0.43 1.476 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 7.74 14.05  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.19 0.35

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5011): 80.20 0.550 3.92 6.08  
 + ID2= 2 ( 5012): 39.40 1.476 3.00 14.05  
 ID = 3 ( 0100): 119.60 1.576 3.08 8.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2----> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION (1537.5) -----

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700 Main Channel
57.54	86.84	0.0700 Main Channel
59.04	86.84	0.0700 Main Channel
61.04	87.84	0.0700 / 0.1100 Main Channel
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.93	21.56
1.21	88.05	.150E+05	7.1	0.96	35.43
1.33	88.17	.233E+05	10.6	0.94	36.49
1.44	88.28	.346E+05	15.5	0.93	37.18
1.56	88.40	.484E+05	22.8	0.96	35.35
1.67	88.51	.634E+05	32.1	0.96	32.90
1.79	88.63	.807E+05	41.2	0.96	32.65

1.90 88.74 .101E+06 54.6 0.64 30.77  
 2.02 88.86 .124E+06 64.7 0.62 31.85

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0100) 119.60 1.58 3.08 8.70 0.72 0.75  
 OUTFLOW : ID= 1 ( 0502) 119.60 1.01 3.67 8.70 0.57 0.66

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5022) | Area (ha)= 25.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 30.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.88 15.02  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 415.53 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB  
 NASHYD ( 5021) | Area (ha)= 25.20 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.46

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.662

PEAK FLOW (cms)= 0.105 (i)  
 TIME TO PEAK (hrs)= 4.833  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 9.63  
 over (min)= 5.00 30.00  
 Storage Coeff. (min)= 7.27 (ii) 29.43 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.17 0.04

PEAK FLOW (cms)= 1.20 0.22 1.280 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 6.87 15.02

\*TOTALS\*

TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.38

140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

ADD HYD ( 0101)  
 1 + 2 = 3  
 ID1= 1 ( 5021): 25.20 0.105 4.83 5.47  
 + ID2= 2 ( 5022): 25.90 1.280 3.00 15.02  
 ID = 3 ( 0101): 51.10 1.286 3.00 10.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3  
 ID1= 1 ( 0101): 51.10 1.286 3.00 10.31  
 + ID2= 2 ( 0502): 119.60 1.014 3.67 8.70  
 ID = 3 ( 0102): 170.70 1.805 3.00 9.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2---> OUT= 1  
 Routing time step (min)= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700 Main Channel
127.36	84.21	0.0700 Main Channel
128.86	84.21	0.0700 Main Channel
130.86	85.21	0.0700 / 0.0900 Main Channel
131.88	86.36	0.0900

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 170.70 1.81 3.00 9.18 0.76 0.77  
 OUTFLOW : ID= 1 ( 0503) 170.70 1.51 3.08 9.18 0.70 0.73

CALIB  
 NASHYD ( 5031) | Area (ha)= 1.70 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.82

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms) = 0.079

PEAK FLOW (cms) = 0.015 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 7.555  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.189

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5032) Area (ha) = 12.20  
 ID= 1 DT= 5.0 min Total Imp(%) = 59.00 Dir. Conn.(%) = 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	7.20	5.00
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	285.19	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

=====  
 ID = 3 ( 0103): 13.90 0.990 3.00 19.63

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 ( 0103):	13.90	0.990	3.00	19.63
+ ID2= 2 ( 0503):	170.70	1.511	3.08	9.18
ID = 3 ( 0104):	184.60	2.303	3.00	9.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 Routing time step (min) = 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 18.26  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 5.80 (ii) 22.96 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.20 0.05

PEAK FLOW (cms) = 0.92 0.14 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.33 0.987 (iii)  
 RUNOFF VOLUME (mm) = 34.03 10.04 21.31  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.53

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0501):	1.70	0.015	3.92	7.56
+ ID2= 2 ( 0502):	12.20	0.987	3.00	21.31

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
0.45	82.30	.312E+03	0.4	0.32
0.57	82.42	.116E+04	1.2	0.28
0.68	82.53	.287E+04	3.5	0.32
0.79	82.64	.549E+04	7.0	0.33
0.91	82.76	.101E+05	14.9	0.39
1.02	82.87	.155E+05	27.5	0.47
1.13	82.98	.214E+05	45.2	0.55
1.25	83.10	.277E+05	67.2	0.64
1.36	83.21	.344E+05	93.6	0.71
1.47	83.32	.426E+05	125.3	0.77
1.59	83.44	.516E+05	162.2	0.82
1.70	83.55	.620E+05	204.2	0.86
1.81	83.66	.747E+05	254.0	0.89
1.95	83.80	.924E+05	324.9	0.92
2.08	83.93	.113E+06	411.3	0.95
2.21	84.06	.135E+06	515.5	1.00

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0104) 184.60 2.30 3.00 9.97 0.62 0.29  
 OUTFLOW: ID= 1 ( 0504) 184.60 1.71 3.50 9.97 0.59 0.28

CALIB  
 NASHYD ( 5041) Area (ha) = 0.30 Curve Number (CN) = 68.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.89

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59

1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.002 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 6.763  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.169

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5042) Area (ha) = 7.40  
 ID= 1 DT= 5.0 min Total Imp(%) = 66.00 Dir. Conn.(%) = 54.00

Surface Area (ha)	4.88	2.52
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	222.11	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59

1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 over (min) 5.00  
 Storage Coeff. (min)= 4.99 (ii) 22.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.21 0.05

PEAK FLOW (cms) = 0.65 0.07 \*TOTALS\* 0.688 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.33 3.00  
 RUNOFF VOLUME (mm) = 34.03 9.51 22.75  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.24 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5041): 0.30 0.002 4.00 6.76  
 + ID2= 2 ( 5042): 7.40 0.688 3.00 22.75  
 ID = 3 ( 0105): 7.70 0.689 3.00 22.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0105): 7.70 0.689 3.00 22.12  
 + ID2= 2 ( 0504): 184.60 1.709 3.50 9.97  
 ID = 3 ( 0106): 192.30 1.869 3.33 10.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5201) Area (ha) = 22.80 Curve Number (CN)= 72.0  
 ID= 1 DT= 5.0 min Ua (mm) = 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.31

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59

Unit Hyd Qpeak (cms) = 0.663

PEAK FLOW (cms) = 0.148 (i)  
 TIME TO PEAK (hrs) = 4.583  
 RUNOFF VOLUME (mm) = 7.844  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.196

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5202) Area (ha) = 6.90  
 ID= 1 DT= 5.0 min Total Imp(%) = 23.00 Dir. Conn.(%) = 12.00

Surface Area (ha)	1.59	5.31
Dep. Storage (mm)	6.00	8.00

Average Slope (%) = 1.00 1.00  
 Length (m) = 214.48 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 over (min) 5.00  
 Storage Coeff. (min)= 4.89 (ii) 23.70 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.22 0.05

PEAK FLOW (cms) = 0.14 0.12 \*TOTALS\* 0.189 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.33 3.00  
 RUNOFF VOLUME (mm) = 34.03 9.13 12.12  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.23 0.30

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.



0.90 83.86 .510E+05 58.8 0.63 14.46

ADD HYD ( 0111)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5201):	22.80	0.148	4.58	7.84
+ ID2= 2 ( 5202):	6.90	0.189	3.00	12.12
=====				
ID = 3 ( 0111):	29.70	0.199	3.00	8.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0521)  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 5212)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min	13.80	52.00	40.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	7.18	6.62
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	303.32	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	21.47
over (min)	5.00	25.00
Storage Coeff. (min)=	6.02 (ii)	22.10 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.19	0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.88	0.22	0.988 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	11.99	20.81
TOTAL RAINFALL (mm)=	40.03	40.03	40.03

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0111)	29.70	0.20	3.00	8.84	0.15	0.24
OUTFLOW: ID= 1 ( 0521)	29.70	0.18	4.75	8.83	0.15	0.23

CALIB NASHYD ( 5211)	Area (ha)	Curve Number (CN)
ID= 1 DT= 5.0 min	1.90	77.0
	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.95	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)=	0.019 (i)
TIME TO PEAK (hrs)=	4.083
RUNOFF VOLUME (mm)=	9.508
TOTAL RAINFALL (mm)=	40.032
RUNOFF COEFFICIENT =	0.238

RUNOFF COEFFICIENT = 0.85 0.30 0.52

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.019	4.08	9.51
+ ID2= 2 ( 5212):	13.80	0.988	3.00	20.81
=====				
ID = 3 ( 0112):	15.70	0.990	3.00	19.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0112):	15.70	0.990	3.00	19.44
+ ID2= 2 ( 0521):	29.70	0.180	4.75	8.83
=====				
ID = 3 ( 0113):	45.40	1.039	3.00	12.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0106):	192.30	1.869	3.33	10.45
+ ID2= 2 ( 0113):	45.40	1.039	3.00	12.50
=====				
ID = 3 ( 0114):	237.70	2.906	3.00	10.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

<---- hydrograph ----> <-pipe / channel-->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLW : ID= 2 ( 0114)	237.70	2.91	3.00	10.84	0.36

OUTFLOW: ID= 1 ( 0505) 237.70 2.46 3.08 10.84 0.33 0.31

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5051)	1.30	68.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.62	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.012 (i)  
 TIME TO PEAK (hrs)= 3.667  
 RUNOFF VOLUME (mm)= 6.768  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.169

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)
STANDHYD ( 5052)	14.60

|ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	9.64	4.96
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	311.98	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 18.03  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 6.12 (ii) 23.37 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 1.26 0.14 1.321 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 9.51 22.75  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.24 0.57

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 5051):	1.30	0.012	3.67	6.77
+ ID2= 2 ( 5052):	14.60	1.321	3.00	22.75
ID = 3 ( 0107):	15.90	1.324	3.00	21.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0108)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0107):	15.90	1.324	3.00	21.44
+ ID2= 2 ( 0505):	237.70	2.456	3.08	10.84
ID = 3 ( 0108):	253.60	3.468	3.00	11.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0506) |  
 | IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	

346.67 80.41 0.0900  
 387.99 80.33 0.0900  
 415.54 80.53 0.0900  
 447.88 80.49 0.0900

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

----- hydrograph ----- <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0108) 253.60 3.47 3.00 11.51 1.12 1.06  
 OUTFLOW: ID= 1 ( 0506) 253.60 3.25 3.08 11.51 1.09 1.04

----- CALIB -----  
 NASHYD ( 5061) Area (ha)= 3.90 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38

0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.79  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 5.07 (ii) 21.69 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.21 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.68 0.08 0.717 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.43 22.94  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109) -----  
 1 + 2 = 3  
 ID1= 1 ( 5061): 3.90 0.042 3.67 7.56  
 + ID2= 2 ( 5062): 7.80 0.717 3.00 22.94  
 ID = 3 ( 0109): 11.70 0.728 3.00 17.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.042 (i)  
 TIME TO PEAK (hrs)= 3.667  
 RUNOFF VOLUME (mm)= 7.556  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.189

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- CALIB -----  
 STANDHYD ( 5062) Area (ha)= 7.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38

----- ADD HYD ( 0110) -----  
 1 + 2 = 3  
 ID1= 1 ( 0109): 11.70 0.728 3.00 17.81  
 + ID2= 2 ( 0506): 253.60 3.246 3.08 11.51  
 ID = 3 ( 0110): 265.30 3.637 3.08 11.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- CALIB -----  
 NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.42

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.004 (i)  
 TIME TO PEAK (hrs)= 4.750  
 RUNOFF VOLUME (mm)= 6.296  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.157

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5102) | Area (ha)= 0.90  
ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.45	0.45
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	77.46	40.00
Mannings n =	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)=	61.93	15.40
over (min)	5.00	25.00
Storage Coeff. (min)=	2.65 (ii)	21.02 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.29	0.05
PEAK FLOW (cms)=	0.05	0.01
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	34.03	8.53
TOTAL RAINFALL (mm)=	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.44

\*TOTALS\*  
(iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0115) |  
1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5101):	0.80	0.004	4.75	6.30
+ ID2= 2 ( 5102):	0.90	0.059	3.00	17.44
ID = 3 ( 0115):	1.70	0.059	3.00	12.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511) |  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100 / 0.0700
69.13	79.02	0.0700
92.42	79.04	0.0700
98.70	80.89	0.0700 / 0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50

1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Unit Hyd Qpeak (cms)= 0.129

PEAK FLOW (cms)= 0.019 (i)  
TIME TO PEAK (hrs)= 3.583  
RUNOFF VOLUME (mm)= 6.529  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.163

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

INFLOW : ID= 2 ( 0115) | AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
OUTFLOW: ID= 1 ( 0511) | (ha) (cms) (hrs) (mm) (m) (m/s)

CALIB  
STANDHYD ( 5112) | Area (ha)= 1.10  
ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.55	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	85.63	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 18.48  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.82 (ii) 19.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.07 0.02 0.076 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.10 18.46  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.46

Distance Elevation Manning  
 0.00 80.80 0.0900  
 9.73 80.46 0.0900  
 14.10 82.04 0.0900  
 17.18 82.28 0.0900  
 41.13 82.12 0.0900 / 0.0700 Main Channel  
 46.88 79.71 0.0700 Main Channel  
 51.41 80.90 0.0700 / 0.0900 Main Channel  
 94.29 80.56 0.0900  
 175.64 80.72 0.0900  
 192.09 80.85 0.0900

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0116)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5111):	1.90	0.019	3.58	6.53
+ ID2= 2 ( 5112):	1.10	0.076	3.00	18.46
ID = 3 ( 0116):	3.00	0.082	3.00	10.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0116):	3.00	0.082	3.00	10.90
+ ID2= 2 ( 0511):	1.70	0.043	3.00	12.20
ID = 3 ( 0117):	4.70	0.125	3.00	11.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2----> OUT= 1

Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

hydrograph

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0117)	4.70	0.12	3.00	11.37	0.37	0.28
OUTFLOW: ID= 1 ( 0512)	4.70	0.06	3.42	11.37	0.28	0.23

CALIB  
 NASHYD ( 5121)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.70  
 Ia (mm)= 8.00  
 U.H. Tp(hrs)= 1.14

Curve Number (CN)= 71.0  
 # 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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 4.333  
 RUNOFF VOLUME (mm)= 7.553  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.189

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5122)  
 ID= 1 DT= 5.0 min

Area (ha)= 3.20  
 Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.92	1.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	146.06	40.00
Mannings n =	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.24  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.88 (ii) 20.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.25 0.04 0.271 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.29 21.44  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0118)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5121):	0.70	0.005	4.33	7.55

+ ID2= 2 ( 5122): 3.20 0.271 3.00 21.44  
 ID = 3 ( 0118): 3.90 0.272 3.00 18.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0118): 3.90 0.272 3.00 18.95  
 + ID2= 2 ( 0512): 4.70 0.060 3.42 11.37  
 ID = 3 ( 0119): 8.60 0.317 3.00 14.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0110): 265.30 3.637 3.08 11.79  
 + ID2= 2 ( 0119): 8.60 0.317 3.00 14.81  
 ID = 3 ( 0120): 273.90 3.858 3.00 11.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6011) Area (ha)= 44.10 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.83

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.91  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 5.63 (ii) 28.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.20 0.04

PEAK FLOW (cms)= 0.28 0.11 0.323 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 6.61 10.99  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.27

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6011): 44.10 0.275 3.92 5.47  
 + ID2= 2 ( 6012): 11.00 0.323 3.00 10.99  
 ID = 3 ( 0124): 55.10 0.372 3.75 6.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6021) Area (ha)= 43.60 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.95

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.275 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6012) Area (ha)= 11.00  
 ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.08 7.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 270.80 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.247 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) Area (ha)= 12.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93      9.23  
over (min)      5.00      30.00  
Storage Coeff. (min)= 5.90 (ii)      28.44 (ii)  
Unit Hyd. Tpeak (min)= 5.00      30.00  
Unit Hyd. peak (cms)= 0.19      0.04

PEAK FLOW (cms)= 0.48      0.12      0.519 (iii)  
TIME TO PEAK (hrs)= 3.00      3.42      3.00  
RUNOFF VOLUME (mm)= 34.03      6.72      13.00  
TOTAL RAINFALL (mm)= 40.03      40.03      40.03  
RUNOFF COEFFICIENT = 0.85      0.17      0.32

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0    Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ID = 3 ( 0125):    56.50   0.549    3.00    7.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0126)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0124):	55.10	0.372	3.75	6.57
+ ID2= 2 ( 0125):	56.50	0.549	3.00	7.19
ID = 3 ( 0126):	111.60	0.915	3.00	6.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2----> OUT= 1      Routing time step (min)'= 5.00

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 /0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 /0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83

0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.123 (i)  
TIME TO PEAK (hrs)= 4.583  
RUNOFF VOLUME (mm)= 7.844  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.196

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- hydrograph -----      <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0126)	111.60	0.92	3.00	6.88	0.52	0.20
OUTFLOW: ID= 1 ( 0603)	111.60	0.52	4.83	6.88	0.48	0.20

CALIB	Area (ha)=	Total Imp(%)=	Dir. Conn.(%)=
STANDHYD ( 6032)	15.70	28.00	15.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.40	11.30
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	323.52	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB  
NASHYD ( 6031)    Area (ha)= 19.00    Curve Number (CN)= 72.0  
ID= 1 DT= 5.0 min    Ia (mm)= 8.00    # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.32

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59

1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.59  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.26 (ii) 24.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.37 0.26 0.493 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 9.46 13.14  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.24 0.33

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0127)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.123	4.58	7.84
+ ID2= 2 ( 6032):	15.70	0.493	3.00	13.14
=====				
ID = 3 ( 0127):	34.70	0.501	3.00	10.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 6101)	Area (ha)	Curve Number (CN)	U.H. Tp (hrs)
ID= 1 DT= 5.0 min	9.00	70.0	1.23
	Ia (mm)= 8.00	# 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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38

0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.279

PEAK FLOW (cms)= 0.057 (i)  
 TIME TO PEAK (hrs)= 4.500  
 RUNOFF VOLUME (mm)= 7.282  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.182

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 6102)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min	12.10	27.00	16.00

IMPERVIOUS PERVIOUS (i)		
Surface Area (ha)	PERVIOUS (i)	
3.27	8.83	
Dep. Storage (mm)= 6.00	8.00	
Average Slope (%)= 1.00	1.00	
Length (m)= 284.02	40.00	
Mannings n = 0.013	0.250	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38

0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 13.64  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 5.79 (ii) 25.07 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.20 0.04

\*TOTALS\*  
 PEAK FLOW (cms)= 0.31 0.17 0.374 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 8.57 12.64  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.21 0.32

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6101):	9.00	0.057	4.50	7.28
+ ID2= 2 ( 6102):	12.10	0.374	3.00	12.64
=====				
ID = 3 ( 0136):	21.10	0.378	3.00	10.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0127):	34.70	0.501	3.00	10.24
+ ID2= 2 ( 0136):	21.10	0.378	3.00	10.36
=====				
ID = 3 ( 0128):	55.80	0.880	3.00	10.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	55.80	0.880	3.00	10.28
+ ID2= 2 ( 0603):	111.60	0.522	4.83	6.88
=====				
ID = 1 ( 0128):	167.40	1.054	3.00	8.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0604)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (1414.9) ----->			
Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	



368.56 87.05 0.1100

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.40	1.05	3.00	8.01	1.58	0.09
OUTFLOW: ID= 1 ( 0604)	167.40	0.66	5.75	8.00	1.48	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	NASHYD ( 6041)	Area (ha)= 1.70	Curve Number (CN)= 79.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00	
	U.H. Tp(hrs)= 4.12		

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38

0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.016

PEAK FLOW (cms)= 0.006 (i)  
 TIME TO PEAK (hrs)= 7.750  
 RUNOFF VOLUME (mm)= 10.301  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.257

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	STANDHYD ( 6042)	Area (ha)= 22.30
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00	Dir. Conn.(%)= 53.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	14.49	7.81
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	385.57	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38

0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 31.30  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.95 (ii) 20.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.17 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 1.84 0.33 2.010 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 13.76 24.51  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.34 0.61

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 79.0 Ia = Dep. 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 ( 6041):		1.70	0.006	7.75	10.30
+ ID2= 2 ( 6042):		22.30	2.010	3.00	24.51
ID = 3 ( 0129):		24.00	2.010	3.00	23.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)	1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
-----------------	-----------	------	-------	-------	------

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0129):	24.00	2.010	3.00	23.50
+ ID2= 2 ( 0604):	167.40	0.662	5.75	8.00
ID = 3 ( 0130):	191.40	2.299	3.00	9.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)	Routing time step (min)'= 5.00
IN= 2--> OUT= 1	

----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88

1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<--- hydrograph ---> <--- pipe / channel --->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.40	2.30	3.00	9.95	0.85	0.27
OUTFLOW: ID= 1 ( 0605)	191.40	0.94	3.75	9.95	0.73	0.26

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 9.505  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.237

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 6112) ID= 1 DT= 5.0 min	Area (ha)= 10.80 Total Imp(%)= 62.00 Dir. Conn.(%)= 50.00
--	---

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	6.70	4.10
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	268.33	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB NASHYD ( 6111) ID= 1 DT= 5.0 min	Area (ha)= 0.60 Ia (mm)= 8.00 U.H. Tp(hrs)= 1.08	Curve Number (CN)= 77.0 # of Linear Res.(N)= 3.00
--	--	--

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	8.73	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.021

--- TRANSFORMED HYETOGRAPH ---

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max. Eff. Inten. (mm/hr)= 61.93  
 over (min)= 5.00  
 Storage Coeff. (min)= 5.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00 (ii)

Unit Hyd. peak (cms)= 0.20 0.05  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.87 0.14 0.943 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.73 22.88  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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 ( 0137) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6111):	0.60	0.005	4.25	9.51
+ ID2= 2 ( 6112):	10.80	0.943	3.00	22.88
ID = 3 ( 0137):	11.40	0.944	3.00	22.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0137):	11.40	0.944	3.00	22.17
+ ID2= 2 ( 0605):	191.40	0.943	3.75	9.95
ID = 3 ( 0139):	202.80	1.630	3.00	10.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD ( 6051) ID= 1 DT= 5.0 min	Area (ha)= 0.40 Ia (mm)= 8.00 U.H. Tp(hrs)= 1.31	Curve Number (CN)= 66.0 # 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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.002 (i)  
 TIME TO PEAK (hrs)= 4.583  
 RUNOFF VOLUME (mm)= 6.292  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.157

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 6052) ID= 1 DT= 5.0 min	Area (ha)= 15.50 Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00
--	---

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	10.23	5.27
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	321.46	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.78  
over (min) 5.00 25.00  
Storage Coeff. (min)= 6.24 (ii) 23.98 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
PEAK FLOW (cms)= 1.33 0.13 1.392 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 8.90 22.47  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.22 0.56

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6051):	0.40	0.002	4.58	6.29
+ ID2= 2 ( 6052):	15.50	1.392	3.00	22.47
=====				
ID = 3 ( 0131):	15.90	1.392	3.00	22.06

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 ( 0131):	15.90	1.392	3.00	22.06
+ ID2= 2 ( 0139):	202.80	1.630	3.00	10.63
=====				
ID = 3 ( 0132):	218.70	3.022	3.00	11.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)			
IN= 2---> OUT= 1			
Routing time step (min)'= 5.00			

<----- DATA FOR SECTION ( 350.0) ----->			
Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84

1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

		<---- hydrograph ---->			<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0132)	218.70	3.02	3.00	11.46	0.48	0.54
OUTFLOW: ID= 1 ( 0530)	218.70	2.15	3.08	11.46	0.43	0.50

CALIB			
STANDHYD ( 5302)			
ID= 1 DT= 5.0 min			
Area (ha)=	5.80		
Total Imp(%)=	60.00	Dir. Conn.(%)=	48.00

		IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	3.48		2.32		
Dep. Storage (mm)=	6.00		8.00		
Average Slope (%)=	1.00		1.00		
Length (m)=	196.64		40.00		
Mannings n	0.013		0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.40  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.64 (ii) 23.01 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.22 0.05

\*TOTALS\*  
PEAK FLOW (cms)= 0.46 0.05 0.485 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 8.53 20.77  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.21 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.70	2.147	3.08	11.46
+ ID2= 2 ( 5302):	5.80	0.485	3.00	20.77
=====				
ID = 3 ( 0134):	224.50	2.385	3.08	11.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.90	3.858	3.00	11.88
+ ID2= 2 ( 0134):	224.50	2.385	3.08	11.70
=====				

ID = 3 ( 0135): 498.40 6.202 3.08 11.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507) | Routing time step (min)'= 5.00  
 | IN= 2---> OUT= 1 |

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50

2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0135)	498.40	6.20	3.08	11.80	1.34	0.68
OUTFLOW: ID= 1 ( 0507)	498.40	4.55	3.50	11.80	1.19	0.61

CALIB | NASHYD ( 5071) | Area (ha)= 8.40 Curve Number (CN)= 74.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.72

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.187

PEAK FLOW (cms)= 0.049 (i)  
 TIME TO PEAK (hrs)= 5.167  
 RUNOFF VOLUME (mm)= 8.460  
 TOTAL RAINFALL (mm)= 40.032

RUNOFF COEFFICIENT = 0.211

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB | STANDHYD ( 5072) | Area (ha)= 40.50  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 45.00 Dir. Conn.(%)= 30.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	18.23	22.28
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	519.62	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.80  
 over (min) 10.00 25.00  
 Storage Coeff. (min)= 8.32 (ii) 24.92 (ii)  
 Unit Hyd. Tpeak (min)= 10.00 25.00  
 Unit Hyd. peak (cms)= 0.13 0.05

PEAK FLOW (cms)= 1.69 0.64 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 1.994 (iii) 3.00

RUNOFF VOLUME (mm)= 34.03 10.96 17.88  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.27 0.45

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.0 Ia = Dep. 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 ( 0121) | 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 5071): 8.40 0.049 5.17 8.46  
 + ID2= 2 ( 5072): 40.50 1.994 3.00 17.88  
 ID = 3 ( 0121): 48.90 1.996 3.00 16.27

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 ( 0121): 48.90 1.996 3.00 16.27  
 + ID2= 2 ( 0507): 498.40 4.548 3.50 11.80  
 ID = 3 ( 0122): 547.30 5.692 3.25 12.20

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

STORE HYD( 1505) | ID= 1 DT= 5.0min | AREA (ha)= 253.60  
 QPEAK (cms)= 0.78  
 TPEAK (hrs)= 15.58  
 VOLUME (mm)= 47.57

TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25















1.250 5.51 | 2.750 99.25 | 4.250 7.35 | 5.75 3.68  
 1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68  
 1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Unit Hyd Qpeak (cms) = 0.079

PEAK FLOW (cms) = 0.080 (i)  
 TIME TO PEAK (hrs) = 3.833  
 RUNOFF VOLUME (mm) = 37.512  
 TOTAL RAINFALL (mm) = 91.900  
 RUNOFF COEFFICIENT = 0.408

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5032) Area (ha) = 12.20  
 ID= 1 DT= 5.0 min Total Imp(%) = 59.00 Dir. Conn.(%) = 47.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 7.20 5.00  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 285.19 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68

1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 113.20  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.15 (ii) 12.42 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 2.21 0.94 3.003 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 44.26 63.83  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.48 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5031): 1.70 0.080 3.83 37.51  
 + ID2= 2 ( 5032): 12.20 3.003 3.00 63.83  
 ID = 3 ( 0103): 13.90 3.023 3.00 60.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0104)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0103): 13.90 3.023 3.00 60.61  
 + ID2= 2 ( 0503): 170.70 6.509 3.08 38.09  
 ID = 3 ( 0104): 184.60 8.794 3.00 39.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)

IN= 2--> OUT= 1 Routing time step (min) = 5.00

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

(ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0104) 184.60 8.79 3.00 39.78 0.82 0.34  
 OUTFLOW: ID= 1 ( 0504) 184.60 7.03 3.33 39.78 0.79 0.33

CALIB  
 NASHYD ( 5041) Area (ha) = 0.30 Curve Number (CN) = 68.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.89

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms) = 0.013

PEAK FLOW (cms) = 0.012 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 34.596  
 TOTAL RAINFALL (mm) = 91.900  
 RUNOFF COEFFICIENT = 0.376

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5042) Area (ha)= 7.40  
ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.88 2.52  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 222.11 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36 113.36  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.57 (ii) 11.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 1.56 0.48 1.963 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 42.41 65.89  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.46 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0105)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5041):	0.30	0.012	3.92	34.60
+ ID2= 2 ( 5042):	7.40	1.963	3.00	65.89
ID = 3 ( 0105):	7.70	1.966	3.00	64.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0105):	7.70	1.966	3.00	64.67
+ ID2= 2 ( 0504):	184.60	7.029	3.33	39.78
ID = 3 ( 0106):	192.30	7.617	3.25	40.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 5201) Area (ha)= 22.80 Curve Number (CN)= 72.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
U.H. Tp(hrs)= 1.31

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68

0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.663

PEAK FLOW (cms)= 0.773 (i)  
TIME TO PEAK (hrs)= 4.417  
RUNOFF VOLUME (mm)= 38.533  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.419

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5202) Area (ha)= 6.90  
ID= 1 DT= 5.0 min Total Imp(%)= 23.00 Dir. Conn.(%)= 12.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.59 5.31  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 214.48 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68

0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36 95.72  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.50 (ii) 12.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.32 0.84 1.025 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 42.07 47.33  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.46 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0111)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5201):	22.80	0.773	4.42	38.53
+ ID2= 2 ( 5202):	6.90	1.025	3.00	47.33
ID = 3 ( 0111):	29.70	1.123	3.00	40.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0521)  
IN= 2--- OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

INFLOW : ID= 2 ( 0111)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
29.70	29.70	1.12	3.00	40.58	0.28	0.32
OUTFLOW: ID= 1 ( 0521)	29.70	0.87	4.58	40.56	0.27	0.32

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5211)	1.90	77.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res. (N)= 3.00
	U.H. Tp(hrs)= 0.95	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.095 (i)  
TIME TO PEAK (hrs)= 3.917  
RUNOFF VOLUME (mm)= 44.057  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.479

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 5212)	13.80	52.00	40.00
ID= 1 DT= 5.0 min			

Surface Area (ha)	IMPERVIOUS (%)	PERVIOUS (i)
7.18	7.18	6.62
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	303.32	40.00
Mannings n	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36  
over (min) = 5.00  
Storage Coeff. (min) = 4.30 (ii)  
Unit Hyd. Tpeak (min) = 5.00  
Unit Hyd. peak (cms) = 0.23

PEAK FLOW (cms) = 2.12  
TIME TO PEAK (hrs) = 3.00  
RUNOFF VOLUME (mm) = 85.90  
TOTAL RAINFALL (mm) = 91.90  
RUNOFF COEFFICIENT = 0.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 5211)	1.90	0.095	3.92	44.06
+ ID2= 2 ( 5212)	13.80	3.297	3.00	64.36

ID = 3 ( 0112): 15.70 3.317 3.00 61.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0112)	15.70	3.317	3.00	61.90
+ ID2= 2 ( 0521)	29.70	0.867	4.58	40.56
ID = 3 ( 0113)	45.40	3.689	3.00	47.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0106)	192.30	7.617	3.25	40.78
+ ID2= 2 ( 0113)	45.40	3.689	3.00	47.94
ID = 3 ( 0114)	237.70	10.667	3.00	42.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2----> OUT= 1 | Routing time step (min) = 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 / 0.0900
394.77	81.68	0.0900

431.64 81.44 0.0900  
 477.44 82.08 0.0900  
 481.25 82.81 0.0900  
 501.51 83.16 0.0900

0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

Unit Hyd Qpeak (cms)= 0.080

PEAK FLOW (cms)= 0.069 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 34.601  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.377

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<---- hydrograph ----> <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0114)	237.70	10.67	3.00	42.15	0.77
OUTFLOW: ID= 1 ( 0505)	237.70	10.06	3.08	42.15	0.74

CALIB	STANDHYD	Area	(ha)	Total Imp	(%)	Dir. Conn	(%)
STANDHYD ( 5052)		14.60		66.00		54.00	
ID= 1 DT= 5.0 min							

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 9.64 4.96  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 311.98 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51

0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 113.36  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.38 (ii) 12.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.03 0.92 3.803 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 42.41 65.89  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.46 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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	AREA	QPEAK	TPEAK	R.V.
( 0108)	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 0107)	15.90	3.828	3.00	63.34
+ ID2= 2 ( 0505)	237.70	10.055	3.08	42.15
ID = 3 ( 0108)	253.60	12.701	3.00	43.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700 Main Channel
200.70	78.22	0.0700 Main Channel
203.29	79.35	0.0700 / 0.0900 Main Channel
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

```

<--- hydrograph ---> <-pipe / channel->
      AREA   QPEAK  TPEAK  R.V.  MAX DEPTH  MAX VEL
      (ha)   (cms)  (hrs)  (mm)  (m)        (m/s)
INFLOW : ID= 2 ( 0108) 253.60 12.70 3.00 43.48 1.68 1.04
OUTFLOW: ID= 1 ( 0506) 253.60 11.73 3.17 43.48 1.65 1.09
  
```

```

| CALIB |
| NASHYD ( 5061) | Area (ha)= 3.90 Curve Number (CN)= 71.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.62
  
```

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  3.68  1.583  9.19  3.083  20.22  4.58  5.51
0.167  3.68  1.667  9.19  3.167  20.22  4.67  5.51
0.250  3.68  1.750  9.19  3.250  20.22  4.75  5.51
0.333  3.68  1.833  9.19  3.333  20.22  4.83  5.51
0.417  3.68  1.917  9.19  3.417  20.22  4.92  5.51
0.500  3.68  2.000  9.19  3.500  20.22  5.00  5.51
0.583  5.51  2.083  11.03  3.583  9.19  5.08  3.68
0.667  5.51  2.167  11.03  3.667  9.19  5.17  3.68
0.750  5.51  2.250  11.03  3.750  9.19  5.25  3.68
0.833  5.51  2.333  11.03  3.833  9.19  5.33  3.68
0.917  5.51  2.417  11.03  3.917  9.19  5.42  3.68
1.000  5.51  2.500  11.03  4.000  9.19  5.50  3.68
1.083  5.51  2.583  11.03  4.083  7.35  5.58  3.68
1.167  5.51  2.667  11.03  4.167  7.35  5.67  3.68
1.250  5.51  2.750  99.25  4.250  7.35  5.75  3.68
1.333  5.51  2.833  99.25  4.333  7.35  5.83  3.68
1.417  5.51  2.917  143.36  4.417  7.35  5.92  3.68
1.500  5.51  3.000  143.36  4.500  7.35  6.00  3.68
  
```

```

Unit Hyd Qpeak (cms)= 0.239

PEAK FLOW (cms)= 0.227 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 37.512
TOTAL RAINFALL (mm)= 91.900
RUNOFF COEFFICIENT = 0.408
  
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| CALIB |
| STANDHYD ( 5062) | Area (ha)= 7.80
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00
  
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 5.07 2.73
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 228.04 40.00
Mannings n = 0.013 0.250
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

---- TRANSFORMED HYETOGRAPH ----
      TIME  RAIN  TIME  RAIN  TIME  RAIN  TIME  RAIN
      hrs  mm/hr hrs  mm/hr hrs  mm/hr hrs  mm/hr
0.083  3.68  1.583  9.19  3.083  20.22  4.58  5.51
0.167  3.68  1.667  9.19  3.167  20.22  4.67  5.51
0.250  3.68  1.750  9.19  3.250  20.22  4.75  5.51
0.333  3.68  1.833  9.19  3.333  20.22  4.83  5.51
0.417  3.68  1.917  9.19  3.417  20.22  4.92  5.51
0.500  3.68  2.000  9.19  3.500  20.22  5.00  5.51
0.583  5.51  2.083  11.03  3.583  9.19  5.08  3.68
0.667  5.51  2.167  11.03  3.667  9.19  5.17  3.68
0.750  5.51  2.250  11.03  3.750  9.19  5.25  3.68
0.833  5.51  2.333  11.03  3.833  9.19  5.33  3.68
0.917  5.51  2.417  11.03  3.917  9.19  5.42  3.68
1.000  5.51  2.500  11.03  4.000  9.19  5.50  3.68
1.083  5.51  2.583  11.03  4.083  7.35  5.58  3.68
1.167  5.51  2.667  11.03  4.167  7.35  5.67  3.68
1.250  5.51  2.750  99.25  4.250  7.35  5.75  3.68
1.333  5.51  2.833  99.25  4.333  7.35  5.83  3.68
1.417  5.51  2.917  143.36  4.417  7.35  5.92  3.68
1.500  5.51  3.000  143.36  4.500  7.35  6.00  3.68
  
```

Max.Eff.Inten.(mm/hr)= 143.36 119.99

```

over (min) 5.00 15.00
Storage Coeff. (min)= 3.63 (ii) 11.71 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.09

*TOTALS*
PEAK FLOW (cms)= 1.61 0.56 2.083 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 85.90 45.26 66.80
TOTAL RAINFALL (mm)= 91.90 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.49 0.73
  
```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0109) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
ID1= 1 ( 5061): 3.90 0.227 3.58 37.51
+ ID2= 2 ( 5062): 7.80 2.083 3.00 66.80
=====
ID = 3 ( 0109): 11.70 2.166 3.00 57.04
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0110) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
      (ha) (cms) (hrs) (mm)
ID1= 1 ( 0109): 11.70 2.166 3.00 57.04
+ ID2= 2 ( 0506): 253.60 11.731 3.17 43.48
=====
ID = 3 ( 0110): 265.30 12.737 3.17 44.07
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| NASHYD ( 5101) | Area (ha)= 0.80 Curve Number (CN)= 66.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 1.42
  
```

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  3.68  1.583  9.19  3.083  20.22  4.58  5.51
0.167  3.68  1.667  9.19  3.167  20.22  4.67  5.51
0.250  3.68  1.750  9.19  3.250  20.22  4.75  5.51
0.333  3.68  1.833  9.19  3.333  20.22  4.83  5.51
0.417  3.68  1.917  9.19  3.417  20.22  4.92  5.51
0.500  3.68  2.000  9.19  3.500  20.22  5.00  5.51
0.583  5.51  2.083  11.03  3.583  9.19  5.08  3.68
0.667  5.51  2.167  11.03  3.667  9.19  5.17  3.68
0.750  5.51  2.250  11.03  3.750  9.19  5.25  3.68
0.833  5.51  2.333  11.03  3.833  9.19  5.33  3.68
0.917  5.51  2.417  11.03  3.917  9.19  5.42  3.68
1.000  5.51  2.500  11.03  4.000  9.19  5.50  3.68
1.083  5.51  2.583  11.03  4.083  7.35  5.58  3.68
1.167  5.51  2.667  11.03  4.167  7.35  5.67  3.68
1.250  5.51  2.750  99.25  4.250  7.35  5.75  3.68
1.333  5.51  2.833  99.25  4.333  7.35  5.83  3.68
1.417  5.51  2.917  143.36  4.417  7.35  5.92  3.68
1.500  5.51  3.000  143.36  4.500  7.35  6.00  3.68
  
```

Unit Hyd Qpeak (cms)= 0.022

```

PEAK FLOW (cms)= 0.022 (i)
TIME TO PEAK (hrs)= 4.583
RUNOFF VOLUME (mm)= 32.775
TOTAL RAINFALL (mm)= 91.900
RUNOFF COEFFICIENT = 0.357
  
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| CALIB |
| STANDHYD ( 5102) | Area (ha)= 0.90
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00
  
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 0.45 0.45
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 77.46 40.00
Mannings n = 0.013 0.250
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.





(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0116)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5111):	1.90	0.106	3.50	33.68
+ ID2= 2 ( 5112):	1.10	0.248	3.00	58.93
=====				
ID = 3 ( 0116):	3.00	0.291	3.00	42.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0117)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0116):	3.00	0.291	3.00	42.94
+ ID2= 2 ( 0511):	1.70	0.141	3.08	44.91
=====				
ID = 3 ( 0117):	4.70	0.426	3.00	43.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) Routing time step (min)'= 5.00  
 IN= 2----> OUT= 1

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71

0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	11.03	4.167	7.35	5.67	3.68
1.250	5.51	2.750	11.03	4.250	7.35	5.75	3.68
1.333	5.51	2.833	11.03	4.333	7.35	5.83	3.68
1.417	5.51	2.917	11.03	4.417	7.35	5.92	3.68
1.500	5.51	3.000	11.03	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.023

PEAK FLOW (cms)= 0.026 (i)  
 TIME TO PEAK (hrs)= 4.167  
 RUNOFF VOLUME (mm)= 37.509  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.408

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5122) Area (ha)= 3.20  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	1.92	1.28			
Dep. Storage (mm)=	6.00	8.00			
Average Slope (%)=	1.00	1.00			
Length (m)=	146.06	40.00			
Mannings n =	0.013	0.250			

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68

0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ---->						<-pipe / channel-->	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)		
INFLOW : ID= 2 ( 0117)	4.70	0.43	3.00	43.65	0.59	0.38	
OUTFLOW : ID= 1 ( 0512)	4.70	0.27	3.25	43.64	0.50	0.34	

CALIB  
 NASHYD ( 5121) Area (ha)= 0.70 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 1.14

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68

1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	11.03	4.167	7.35	5.67	3.68
1.250	5.51	2.750	11.03	4.250	7.35	5.75	3.68
1.333	5.51	2.833	11.03	4.333	7.35	5.83	3.68
1.417	5.51	2.917	11.03	4.417	7.35	5.92	3.68
1.500	5.51	3.000	11.03	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 117.57  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 2.78 (ii) 10.92 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.59 0.26 0.816 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 44.91 64.17  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.49 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0118)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5121):	0.70	0.026	4.17	37.51
+ ID2= 2 ( 5122):	3.20	0.816	3.00	64.17
=====				
ID = 3 ( 0118):	3.90	0.821	3.00	59.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0119)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0118):	3.90	0.821	3.00	59.39
+ ID2= 2 ( 0512):	4.70	0.270	3.25	43.64
=====				
ID = 3 ( 0119):	8.60	1.020	3.00	50.78



1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 78.70  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.22 (ii) 13.78 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 1.14 1.02  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 85.90 33.48  
TOTAL RAINFALL (mm)= 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.36

\*TOTALS\*  
1.979 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0125)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0021):	43.60	1.426	4.00	29.38
+ ID2= 2 ( 0022):	12.90	1.979	3.00	45.53
-----				
ID = 3 ( 0125):	56.50	2.259	3.00	33.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0124):	55.10	1.931	3.50	31.81
+ ID2= 2 ( 0125):	56.50	2.259	3.00	33.07
-----				
ID = 3 ( 0126):	111.60	4.090	3.00	32.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->			
Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85

3.00 92.59 .371E+06 358.0 0.88 17.29

<---- hydrograph ---->					<-pipe / channel->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0126)	111.60	4.09	3.00	32.45	0.69	0.24
OUTFLOW: ID= 1 ( 0603)	111.60	2.68	4.50	32.44	0.62	0.22

CALIB  
NASHYD ( 6031) Area (ha)= 19.00 Curve Number (CN)= 72.0  
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 1.32

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.550

PEAK FLOW (cms)= 0.642 (i)  
TIME TO PEAK (hrs)= 4.417  
RUNOFF VOLUME (mm)= 38.533  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.419

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6032) Area (ha)= 15.70  
ID= 1 DT= 5.0 min Total Imp(%)= 28.00 Dir. Conn.(%)= 15.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.40 11.30  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 323.52 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.72  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.47 (ii) 13.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 0.90 1.83 2.434 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 42.93 49.37  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90

RUNOFF COEFFICIENT = 0.93 0.47 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD (0127), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: CALIB, NASHYD (6101), ID=1 DT=5.0 min, Area (ha), Ia (mm), U.H. Tp (hrs), Curve Number (CN), # of Linear Res. (N).

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with columns: TIME (hrs), RAIN (mm/hr) for multiple scenarios.

Table with columns: TIME (hrs), RAIN (mm/hr) for multiple scenarios.

Unit Hyd Qpeak (cms) = 0.279
PEAK FLOW (cms) = 0.304 (i)
TIME TO PEAK (hrs) = 4.333
RUNOFF VOLUME (mm) = 36.518
TOTAL RAINFALL (mm) = 91.900
RUNOFF COEFFICIENT = 0.397

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: CALIB, STANDHYD (6102), ID=1 DT=5.0 min, Area (ha), Total Imp(%), Dir. Conn. (%)

Table with columns: IMPERVIOUS, PERVIOUS (i), Surface Area (ha), Dep. Storage (mm), Average Slope (%), Length (m), Mannings n

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with columns: TIME (hrs), RAIN (mm/hr) for multiple scenarios.

Table with columns: TIME (hrs), RAIN (mm/hr) for multiple scenarios.

Max.Eff.Inten.(mm/hr)= 143.36 92.04
Storage Coeff. (min)= 4.14 (ii) 13.12 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.24 0.08
\*TOTALS\*
PEAK FLOW (cms)= 0.75 1.30 1.828 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 85.90 40.19 47.50
TOTAL RAINFALL (mm)= 91.90 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.44 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 70.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD (0136), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: ADD HYD (0128), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: ADD HYD (0128), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN(0604)
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION (1414.9) table with columns: Distance, Elevation, Manning

TRAVEL TIME TABLE table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min)

1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.016  
 PEAK FLOW (cms)= 0.028 (i)  
 TIME TO PEAK (hrs)= 7.500  
 RUNOFF VOLUME (mm)= 46.483  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.506

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

---- hydrograph ----						<-pipe / channel-->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0128)	167.40	5.12	3.00	36.03	2.35	0.08	
OUTFLOW: ID= 1 ( 0604)	167.40	3.10	4.75	36.02	2.07	0.09	

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	
NASHYD ( 6041)	Area (ha)= 1.70 Curve Number (CN)= 79.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 4.12	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----			
TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19
0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19
0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19
0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03
0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03
0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03
1.000	5.51	2.500	11.03
1.083	5.51	2.583	55.14
1.167	5.51	2.667	55.14
1.250	5.51	2.750	99.25

CALIB	
STANDHYD ( 6042)	Area (ha)= 22.30
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.49 7.81  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 385.57 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68

1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68
-------	------	-------	--------	-------	------	------	------

Max.Eff.Inten.(mm/hr)= 143.36 142.59  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 4.97 (ii) 12.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 4.48 1.88  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 85.90 54.22 71.01  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.59

\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6041):	1.70	0.028	7.50	46.48
+ ID2= 2 ( 6042):	22.30	6.101	3.00	71.01
=====	=====	=====	=====	=====
ID = 3 ( 0129):	24.00	6.101	3.00	69.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0129):	24.00	6.101	3.00	69.27
+ ID2= 2 ( 0604):	167.40	3.104	4.75	36.02
=====	=====	=====	=====	=====
ID = 3 ( 0130):	191.40	7.539	3.00	40.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0605)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 801.4) -----

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 0130) 191.40 7.54 3.00 40.19 1.09 0.37  
 OUTFLOW: ID= 1 ( 0605) 191.40 3.52 3.58 40.19 0.92 0.30

CALIB  
 NASHYD ( 6111) Area (ha)= 0.60 Curve Number (CN)= 77.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.08

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.021

PEAK FLOW (cms)= 0.027 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 44.055  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.479

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

STANDHYD ( 6112) Area (ha)= 10.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 62.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 6.70 4.10  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 268.33 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 127.22  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 4.00 (ii) 11.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

PEAK FLOW (cms)= 2.09 0.89 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 2.849 (iii)  
 RUNOFF VOLUME (mm)= 85.90 49.05 67.47  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.53 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 75.0 Ia = Dep. 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 ( 0137)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6111):	0.60	0.027	4.08	44.05
+ ID2= 2 ( 6112):	10.80	2.849	3.00	67.47
-----				
ID = 3 ( 0137):	11.40	2.854	3.00	66.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0139)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0137):	11.40	2.854	3.00	66.24
+ ID2= 2 ( 0605):	191.40	3.519	3.58	40.19
-----				
ID = 3 ( 0139):	202.80	5.366	3.00	41.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6051) Area (ha)= 0.40 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.31

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68

0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.012

PEAK FLOW (cms)= 0.012 (i)  
 TIME TO PEAK (hrs)= 4.417  
 RUNOFF VOLUME (mm)= 32.772  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.357

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6052) Area (ha)= 15.50  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.23 5.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 321.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68

0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 108.20  
over (min) 5.00 15.00  
Storage Coeff. (min)= 4.46 (ii) 12.88 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 3.21 0.92 3.982 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 40.47 65.00  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.44 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0131)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0051):	0.40	0.012	4.42	32.77
+ ID2= 2 ( 0052):	15.50	3.982	3.00	65.00
-----				
ID = 3 ( 0131):	15.90	3.983	3.00	64.19

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 ( 0131):	15.90	3.983	3.00	64.19
+ ID2= 2 ( 0139):	202.80	5.306	3.00	41.65
-----				

ID = 3 ( 0132): 218.70 9.289 3.00 43.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2--> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 350.0) -----

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 /0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 /0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80

2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ---->					<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0132)	218.70	9.29	3.00	43.29	0.80	0.74
OUTFLOW: ID= 1 ( 0530)	218.70	7.25	3.08	43.29	0.71	0.71

Max.Eff.Inten.(mm/hr)= 143.36 101.50  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.32 (ii) 11.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 1.09 0.39 1.419 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 39.44 61.74  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.43 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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)=	5.80
STANDHYD ( 5302)		Total Imp(%)=	60.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)=	48.00
-----			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	3.48	2.32	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	196.64	40.00	
Mannings n =	0.013	0.250	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

ADD HYD ( 0134)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.70	7.250	3.08	43.29
+ ID2= 2 ( 5302):	5.80	1.419	3.00	61.74
-----				
ID = 3 ( 0134):	224.50	8.066	3.00	43.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.90	13.408	3.08	44.28
+ ID2= 2 ( 0134):	224.50	8.066	3.00	43.77
-----				
ID = 3 ( 0135):	498.40	21.413	3.08	44.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2--> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 40.0) -----













hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.26	1.50	5.65	3.00	12.43	4.50	3.39
0.17	2.26	1.67	5.65	3.17	12.43	4.67	3.39
0.33	2.26	1.83	5.65	3.33	12.43	4.83	3.39
0.50	3.39	2.00	6.78	3.50	5.65	5.00	2.26
0.67	3.39	2.17	6.78	3.67	5.65	5.17	2.26
0.83	3.39	2.33	6.78	3.83	5.65	5.33	2.26
1.00	3.39	2.50	33.90	4.00	4.52	5.50	2.26
1.17	3.39	2.67	61.02	4.17	4.52	5.67	2.26
1.33	3.39	2.83	88.14	4.33	4.52	5.83	2.26

RUNOFF COEFFICIENT = 0.225

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5012)	39.40	65.0
ID= 1 DT= 5.0 min	38.00	3.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	14.97
Dep. Storage (mm)	6.00
Average Slope (%)	1.00
Length (m)	512.51
Mannings n	0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5011)	80.20	65.0
ID= 1 DT= 5.0 min	8.00	3.00
U.H. Tp (hrs)	0.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 3.621

PEAK FLOW (cms) = 1.208 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 12.696  
 TOTAL RAINFALL (mm) = 56.500

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr) = 88.14  
 over (min) = 5.00  
 Storage Coeff. (min) = 7.16 (ii)  
 Unit Hyd. Tpeak (min) = 5.00  
 Unit Hyd. peak (cms) = 0.17

PEAK FLOW (cms) = 2.08  
 TIME TO PEAK (hrs) = 3.00

\*TOTALS\*  
 2.636 (iii)  
 3.00

RUNOFF VOLUME (mm) = 50.50  
 TOTAL RAINFALL (mm) = 56.50  
 RUNOFF COEFFICIENT = 0.89

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5011):	80.20	1.208	3.92	12.70
+ ID2= 2 ( 5012):	39.40	2.636	3.00	23.87
ID = 3 ( 0100):	119.60	2.865	3.00	16.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2---- OUT= 1 | Routing time step (min)= 5.00

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0100) 119.60 2.86 3.00 16.38 0.96 0.87  
 OUTFLOW: ID= 1 ( 0502) 119.60 2.02 3.58 16.37 0.81 0.80

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5021)	25.20	62.0
ID= 1 DT= 5.0 min	8.00	3.00
U.H. Tp (hrs)	1.46	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39

0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.662

PEAK FLOW (cms) = 0.230 (i)  
 TIME TO PEAK (hrs) = 4.750  
 RUNOFF VOLUME (mm) = 11.520  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5022) Area (ha) = 25.90  
 ID= 1 DT= 5.0 min Total Imp(%) = 42.00 Dir. Conn.(%) = 30.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 10.88 15.02  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 415.53 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26

0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 27.97  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.32 (ii) 20.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*

PEAK FLOW (cms) = 1.75 0.57 2.049 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.33 3.00  
 RUNOFF VOLUME (mm) = 50.50 13.91 24.88  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.25 0.44

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0101)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5021):	25.20	0.230	4.75	11.52
+ ID2= 2 ( 5022):	25.90	2.049	3.00	24.88
ID = 3 ( 0101):	51.10	2.066	3.00	18.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0101):	51.10	2.066	3.00	18.29

+ ID2= 2 ( 0502): 119.60 2.022 3.58 16.37  
 ID = 3 ( 0102): 170.70 3.272 3.00 16.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

ROUTE CHN( 0503)  
 IN= 2--> OUT= 1 Routing time step (min) = 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94

<--- hydrograph ---> <-pipe / channel-->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0102)	170.70	3.27	3.00	16.95	1.02	0.91
OUTFLOW: ID= 1 ( 0503)	170.70	2.85	3.08	16.95	0.95	0.87

CALIB  
 NASHYD ( 5031) Area (ha) = 1.70 Curve Number (CN) = 71.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.82

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.079

PEAK FLOW (cms) = 0.032 (i)  
 TIME TO PEAK (hrs) = 3.833

RUNOFF VOLUME (mm)= 15.449  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5032) Area (ha)= 12.20  
 ID= 1 DT= 5.0 min Total Imp(%)= 59.00 Dir. Conn.(%)= 47.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 7.20 5.00  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 285.19 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)= 88.14 42.47  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.04 (ii) 17.28 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

PEAK FLOW (cms)= 1.34 0.33 1.556 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 19.39 34.01  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34 0.60

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0103)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0103):	1.70	0.032	3.83	15.45
+ ID2= 2 ( 0103):	12.20	1.556	3.00	34.01
ID = 3 ( 0103):	13.90	1.562	3.00	31.74

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 ( 0103):	13.90	1.562	3.00	31.74
+ ID2= 2 ( 0503):	170.70	2.855	3.08	16.95
ID = 3 ( 0104):	184.60	4.058	3.00	18.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2--> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900

217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

hydrograph <-----> <--- pipe / channel --->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0104) 184.60 4.06 3.00 18.06 0.70 0.32  
 OUTFLOW: ID= 1 ( 0504) 184.60 3.25 3.50 18.06 0.67 0.31

ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.89

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Tpeak (cms)= 0.013

PEAK FLOW (cms)= 0.005 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 13.992  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.248

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5042) Area (ha)= 7.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.88 2.52  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 222.11 40.00  
 Mannings n = 0.013 0.250

CALIB  
 NASHYD ( 5041) Area (ha)= 0.30 Curve Number (CN)= 68.0

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 42.02  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.34 (ii) 16.63 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.06

PEAK FLOW (cms)= 0.95 0.17 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 1.057 (iii)  
 RUNOFF VOLUME (mm)= 50.50 18.42 35.74  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.33 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0105)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5041):	0.30	0.005	3.92	13.99
+ ID2= 2 ( 5042):	7.40	1.057	3.00	35.74
ID = 3 ( 0105):	7.70	1.058	3.00	34.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0106)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0105):	7.70	1.058	3.00	34.89
+ ID2= 2 ( 0504):	184.60	3.255	3.50	18.06
ID = 3 ( 0106):	192.30	3.505	3.42	18.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5201) Area (ha)= 22.80 Curve Number (CN)= 72.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.31

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.94  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.25 (ii) 17.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.06

PEAK FLOW (cms)= 0.20 0.29 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.25 0.383 (iii)  
 RUNOFF VOLUME (mm)= 50.50 18.03 21.92  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.32 0.39

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0111)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5201):	22.80	0.314	4.50	15.97
+ ID2= 2 ( 5202):	6.90	0.383	3.00	21.92
ID = 3 ( 0111):	29.70	0.415	3.25	17.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0521)  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 815.4) -----			
Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Unit Hyd Qpeak (cms)= 0.663  
 PEAK FLOW (cms)= 0.314 (i)  
 TIME TO PEAK (hrs)= 4.500  
 RUNOFF VOLUME (mm)= 15.971  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5202) Area (ha)= 6.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 23.00 Dir. Conn.(%)= 12.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.59	5.31
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	214.48	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26



----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0111)	29.70	0.41	3.25	17.35	0.20	0.29
OUTFLOW : ID= 1 ( 0521)	29.70	0.37	4.58	17.34	0.19	0.28

CALIB				
NASHYD ( 5211)	Area (ha)= 1.90	Curve Number (CN)= 77.0		
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00		
	U.H. Tp(hrs)= 0.95			

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 48.55  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.23 (ii) 16.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 1.28 0.51 1.624 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 22.65 33.79  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.40 0.60

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5211):	1.90	0.040	4.00	18.91
+ ID2= 2 ( 5212):	13.80	1.624	3.00	33.79
ID = 3 ( 0112):	15.70	1.631	3.00	31.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0113)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0112):	15.70	1.631	3.00	31.99
+ ID2= 2 ( 0521):	29.70	0.368	4.58	17.34

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.076

PEAK FLOW (cms)= 0.040 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 18.912  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.335

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 5212)	Area (ha)= 13.80		
ID= 1 DT= 5.0 min	Total Imp(%)= 52.00	Dir. Conn.(%)= 40.00	

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 7.18 6.62  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26

ID = 3 ( 0113): 45.40 1.747 3.00 22.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):	192.30	3.505	3.42	18.74
+ ID2= 2 ( 0113):	45.40	1.747	3.00	22.41
ID = 3 ( 0114):	237.70	4.980	3.00	19.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)	
IN= 2----> OUT= 1	Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70

0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0114) 237.70 4.98 3.00 19.44 0.49 0.41
OUTFLOW : ID= 1 ( 0505) 237.70 4.48 3.08 19.44 0.46 0.40

```

```

| CALIB |
| NASHYD ( 5051) | Area (ha)= 1.30 Curve Number (CN)= 68.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
|-----| U.H. Tp(hrs)= 0.62

```

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 2.26 1.583 5.65 3.083 12.43 4.58 3.39
0.167 2.26 1.667 5.65 3.167 12.43 4.67 3.39
0.250 2.26 1.750 5.65 3.250 12.43 4.75 3.39
0.333 2.26 1.833 5.65 3.333 12.43 4.83 3.39
0.417 2.26 1.917 5.65 3.417 12.43 4.92 3.39
0.500 2.26 2.000 5.65 3.500 12.43 5.00 3.39
0.583 3.39 2.083 6.78 3.583 5.65 5.08 2.26
0.667 3.39 2.167 6.78 3.667 5.65 5.17 2.26
0.750 3.39 2.250 6.78 3.750 5.65 5.25 2.26
0.833 3.39 2.333 6.78 3.833 5.65 5.33 2.26
0.917 3.39 2.417 6.78 3.917 5.65 5.42 2.26
1.000 3.39 2.500 6.78 4.000 5.65 5.50 2.26

```

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

```

Max.Eff.Inten.(mm/hr)= 88.14 42.02
over (min) 5.00 20.00
Storage Coeff. (min)= 5.32 (ii) 17.61 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.21 0.06
*TOTALS*
PEAK FLOW (cms)= 1.82 0.32 2.038 (iii)
TIME TO PEAK (hrs)= 3.00 3.17 3.00
RUNOFF VOLUME (mm)= 50.50 18.42 35.74
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.89 0.33 0.63

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0505): 1.30 0.827 3.58 14.00
+ ID2= 2 ( 0505): 14.60 2.038 3.00 35.74
=====
ID = 3 ( 0107): 15.90 2.046 3.00 33.96

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0108) |
| 1 + 2 = 3 |
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0107): 15.90 2.046 3.00 33.96
+ ID2= 2 ( 0505): 237.70 4.477 3.08 19.44
=====
ID = 3 ( 0108): 253.60 5.957 3.00 20.35

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

```

Unit Hyd Qpeak (cms)= 0.080
PEAK FLOW (cms)= 0.027 (i)
TIME TO PEAK (hrs)= 3.583
RUNOFF VOLUME (mm)= 13.998
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.248

```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| CALIB |
| STANDHYD ( 5052) | Area (ha)= 14.60
| ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 54.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 9.64 4.96
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 311.98 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.26 1.583 5.65 3.083 12.43 4.58 3.39
0.167 2.26 1.667 5.65 3.167 12.43 4.67 3.39
0.250 2.26 1.750 5.65 3.250 12.43 4.75 3.39
0.333 2.26 1.833 5.65 3.333 12.43 4.83 3.39
0.417 2.26 1.917 5.65 3.417 12.43 4.92 3.39
0.500 2.26 2.000 5.65 3.500 12.43 5.00 3.39
0.583 3.39 2.083 6.78 3.583 5.65 5.08 2.26
0.667 3.39 2.167 6.78 3.667 5.65 5.17 2.26
0.750 3.39 2.250 6.78 3.750 5.65 5.25 2.26
0.833 3.39 2.333 6.78 3.833 5.65 5.33 2.26
0.917 3.39 2.417 6.78 3.917 5.65 5.42 2.26
1.000 3.39 2.500 6.78 4.000 5.65 5.50 2.26
1.083 3.39 2.583 33.90 4.083 4.52 5.58 2.26
1.167 3.39 2.667 33.90 4.167 4.52 5.67 2.26

```

```

| ROUTE CHN( 0506) |
| IN= 2----> OUT= 1 | Routing time step (min)= 5.00

```

```

<----- DATA FOR SECTION ( 304.1) ----->
Distance Elevation Manning
0.00 81.42 0.0900
7.45 81.36 0.0900
32.34 80.38 0.0900
45.97 80.05 0.0900
65.23 79.93 0.0900
84.49 80.35 0.0900
113.49 80.02 0.0900
136.48 80.07 0.0900
188.81 79.81 0.0900
197.86 79.25 0.0900 / 0.0700 Main Channel
200.70 78.22 0.0700 Main Channel
203.29 79.35 0.0700 / 0.0900 Main Channel
204.01 79.67 0.0900
236.47 80.40 0.0900
277.80 80.48 0.0900
305.35 80.37 0.0900
346.67 80.41 0.0900
387.99 80.33 0.0900
415.54 80.53 0.0900
447.88 80.49 0.0900

```

```

<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV. TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.11 78.34 .979E+01 0.0 0.23 21.53
0.23 78.45 .392E+02 0.0 0.37 13.56
0.34 78.56 .881E+02 0.1 0.48 10.35
0.46 78.68 .157E+03 0.3 0.58 8.54
0.57 78.79 .245E+03 0.6 0.67 7.36
0.68 78.91 .352E+03 0.9 0.76 6.52
0.80 79.02 .480E+03 1.4 0.84 5.88
0.91 79.13 .627E+03 1.9 0.92 5.38
1.03 79.25 .793E+03 2.7 0.99 4.98
1.15 79.37 .103E+04 3.8 1.09 4.55
1.28 79.50 .135E+04 5.2 1.16 4.28
1.40 79.62 .175E+04 7.1 1.20 4.12
1.52 79.75 .228E+04 9.3 1.21 4.08
1.65 79.87 .318E+04 11.7 1.10 4.52
1.77 80.00 .524E+04 15.8 0.90 5.52
1.90 80.12 .973E+04 24.3 0.74 6.69
2.02 80.24 .158E+05 39.7 0.75 6.62
2.15 80.37 .230E+05 59.2 0.77 6.46
2.27 80.49 .349E+05 90.3 0.77 6.44

```

<--- hydrograph ---> <-pipe / channel->

AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0108) 253.60 5.96 3.00 20.35 1.32 1.17  
 OUTFLOW: ID= 1 ( 0506) 253.60 5.67 3.08 20.35 1.30 1.17

CALIB  
 NASHYD ( 5061) Area (ha)= 3.90 Curve Number (CN)= 71.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.62

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.239

PEAK FLOW (cms) = 0.090 (i)  
 TIME TO PEAK (hrs) = 3.583  
 RUNOFF VOLUME (mm) = 15.450  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5062) Area (ha)= 7.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 53.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.07 2.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 228.04 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39		
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39		
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39		
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39		
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39		
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39		
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26		
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26		
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26		
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26		
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26		
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26		
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26		
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26		
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26		
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26		
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26		
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26		

Max.Eff.Inten.(mm/hr)= 88.14 45.50  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.41 (ii) 16.31 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.06

PEAK FLOW (cms)= 0.98 0.20 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 1.110 (iii)  
 RUNOFF VOLUME (mm)= 50.50 19.99 36.16  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.35 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0109)  
 1 + 2 = 3  
 ID1= 1 ( 5061): 3.90 0.090 3.58 15.45  
 + ID2= 2 ( 5062): 7.80 1.110 3.00 36.16  
 ID = 3 ( 0109): 11.70 1.138 3.00 29.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0110)  
 1 + 2 = 3  
 ID1= 1 ( 0109): 11.70 1.138 3.00 29.26  
 + ID2= 2 ( 0506): 253.60 5.670 3.08 20.35  
 ID = 3 ( 0110): 265.30 6.297 3.08 20.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 5101) Area (ha)= 0.80 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 1.42

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.022

PEAK FLOW (cms)= 0.008 (i)  
 TIME TO PEAK (hrs)= 4.667  
 RUNOFF VOLUME (mm)= 13.112  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.232

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5102) Area (ha)= 0.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.45 0.45  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 77.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39		
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39		
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39		
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39		
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39		
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39		
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26		
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26		

0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 36.65  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.31 (ii) 15.29 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.07

PEAK FLOW (cms)= 0.08 0.03  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 16.79  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.30

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0115)				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5101):	0.80	0.008	4.67	13.11
+ ID2= 2 ( 5102):	0.90	0.095	3.00	28.58
ID = 3 ( 0115):	1.70	0.096	3.00	21.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0511)  
 IN= 2----> OUT= 1  
 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 553.6) ----->  
 Distance Elevation Manning

0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100 / 0.0700
69.13	79.02	0.0700
92.42	79.04	0.0700
98.70	80.89	0.0700 / 0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

			<---- hydrograph ---->			<- pipe / channel ->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW: ID= 2 ( 0115)	1.70	0.10	3.00	21.30	0.02	0.24	
OUTFLOW: ID= 1 ( 0511)	1.70	0.07	3.08	21.30	0.01	0.24	

CALIB  
 NASHYD ( 5111)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 1.90  
 Ia (mm)= 8.00  
 U.H. Tp(hrs)= 0.56  
 Curve Number (CN)= 67.0  
 # 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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.129

PEAK FLOW (cms)= 0.041 (i)  
 TIME TO PEAK (hrs)= 3.583  
 RUNOFF VOLUME (mm)= 13.548  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.240

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5112)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 1.10  
 Total Imp(%)= 50.00  
 Dir. Conn.(%)= 35.00

IMPERVIOUS (i) PERVIOUS (i)  
 Surface Area (ha)= 0.55 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 85.63 40.00  
 Mannings n = 0.013 0.250

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	TIME hrs	RAIN mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 42.91  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.45 (ii) 14.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.08

PEAK FLOW (cms)= 0.09 0.04  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 19.48  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0116)				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5111):	1.90	0.041	3.58	13.55
+ ID2= 2 ( 5112):	1.10	0.127	3.00	30.33

=====  
 ID = 3 ( 0116): 3.00 0.142 3.00 19.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0117) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0116): 3.00 0.142 3.00 19.70  
 + ID2= 2 ( 0511): 1.70 0.068 3.00 21.30  
 =====  
 ID = 3 ( 0117): 4.70 0.210 3.00 20.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN ( 0512) |  
 | IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90

TIME TO PEAK (hrs)= 4.250  
 RUNOFF VOLUME (mm)= 15.447  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.273

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 5122) | Area (ha)= 3.20  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 47.00  
 =====  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.92 1.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 146.06 40.00  
 Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 44.41  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.37 (ii) 15.39 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.07

1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 0117) 4.70 0.21 3.00 20.28 0.45 0.32  
 OUTFLOW: ID= 1 ( 0512) 4.70 0.11 3.33 20.27 0.35 0.27

-----  
 | CALIB |  
 | NASHYD ( 5121) | Area (ha)= 0.70 Curve Number (CN)= 71.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 | U.H. Tp(hrs)= 1.14

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.023  
 PEAK FLOW (cms)= 0.010 (i)

PEAK FLOW (cms)= 0.36 0.09 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 0.425 (iii)  
 RUNOFF VOLUME (mm)= 50.50 19.78 34.21  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.35 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0118) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 5121): 0.70 0.010 4.25 15.45  
 + ID2= 2 ( 5122): 3.20 0.425 3.00 34.21  
 =====  
 ID = 3 ( 0118): 3.90 0.427 3.00 30.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0119) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0118): 3.90 0.427 3.00 30.84  
 + ID2= 2 ( 0512): 4.70 0.115 3.33 20.27  
 =====  
 ID = 3 ( 0119): 8.60 0.513 3.00 25.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0120) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0110): 265.30 6.297 3.08 20.74  
 + ID2= 2 ( 0119): 8.60 0.513 3.00 25.07  
 =====  
 ID = 3 ( 0120): 273.90 6.640 3.00 20.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD ( 6011) Area (ha)= 44.10 Curve Number (CN)= 62.0
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data from 0.083 to 1.500 hours.

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.608 (i)
TIME TO PEAK (hrs)= 3.917
RUNOFF VOLUME (mm)= 11.521
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 6012) Area (ha)= 11.00
Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00
IMPERVIOUS PERVIOUS (i)

THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with 5 columns: AREA, QPEAK, TPEAK, R.V. Rows show area and peak flow for sub-catchments 1, 2, and 3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD ( 6021) Area (ha)= 43.60 Curve Number (CN)= 62.0
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.95

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for catchment 6021.

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.545 (i)

Surface Area (ha)= 3.08 7.92
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 270.00 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for catchment 6022.

Max.Eff.Inten.(mm/hr)= 88.14 26.15
over (min)= 5.00 20.00
Storage Coeff. (min)= 4.88 (ii) 19.74 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.41 0.30 0.600 (iii)
TIME TO PEAK (hrs)= 3.00 3.25 3.00
RUNOFF VOLUME (mm)= 50.50 13.46 19.39
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.89 0.24 0.34

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 62.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

TIME TO PEAK (hrs)= 4.000
RUNOFF VOLUME (mm)= 11.521
TOTAL RAINFALL (mm)= 56.500
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 6022) Area (ha)= 12.90
Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.51 8.38
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 293.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for catchment 6022.

Max.Eff.Inten.(mm/hr)= 88.14 26.96
over (min)= 5.00 20.00
Storage Coeff. (min)= 5.12 (ii) 19.80 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

PEAK FLOW (cms) = 0.69 0.33 0.896 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.25 3.00  
 RUNOFF VOLUME (mm) = 50.50 13.66 22.13  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.24 0.39

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125) |

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0021):	43.60	0.545	4.00	11.52
+ ID2= 2 ( 0022):	12.90	0.896	3.00	22.13
ID = 3 ( 0125):	56.50	0.981	3.00	13.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126) |

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	0.784	3.50	13.09
+ ID2= 2 ( 0125):	56.50	0.981	3.00	13.94
ID = 3 ( 0126):	111.60	1.699	3.00	13.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0603) | Routing time step (min) = 5.00  
 | IN= 2--- OUT= 1 |

<--- DATA FOR SECTION (2135.9) --->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400

NASHYD ( 6031) | Area (ha) = 19.00 Curve Number (CN) = 72.0  
 | ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res. (N) = 3.00  
 U.H. Tp (hrs) = 1.32

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.550

PEAK FLOW (cms) = 0.261 (i)  
 TIME TO PEAK (hrs) = 4.500  
 RUNOFF VOLUME (mm) = 15.971  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.283

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB |  
 | STANDHYD ( 6032) | Area (ha) = 15.70  
 | ID= 1 DT= 5.0 min | Total Imp(%) = 28.00 Dir. Conn.(%) = 15.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	4.40	11.30
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	323.52	40.00

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
86.45	91.21	0.1400			
103.50	90.80	0.1400			
118.09	90.23	0.1400			
127.84	90.09	0.1400 / 0.0700	0.0700	0.1400	Main Channel
129.84	89.59	0.0700			Main Channel
130.34	90.09	0.0700 / 0.1400	0.1400	0.1400	Main Channel
140.57	90.14	0.1400			
161.87	90.11	0.1400			
177.03	90.04	0.1400			
188.67	89.87	0.1400			
199.59	90.31	0.1400			
212.02	90.96	0.1400			
225.58	91.35	0.1400			
252.71	91.66	0.1400			
274.11	91.86	0.1400			

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<--- hydrograph ---> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	1.70	3.00	13.52	0.57	0.21
OUTFLOW: ID= 1 ( 0603)	111.60	1.06	4.67	13.52	0.53	0.20

CALIB |

Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 37.12  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 5.44 (ii) 18.35 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.20 0.06

\*TOTALS\*

PEAK FLOW (cms) = 0.54 0.63 0.956 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.25 3.00  
 RUNOFF VOLUME (mm) = 50.50 18.53 23.33  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.33 0.41

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0127)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6031):	19.00	0.261	4.50	15.97
+ ID2= 2 ( 6032):	15.70	0.956	3.00	23.33
-----				
ID = 3 ( 0127):	34.70	0.981	3.00	19.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 6101)  
ID= 1 DT= 5.0 min

Area (ha)=	9.00	Curve Number (CN)=	70.0
Ia (mm)=	8.00	# of Linear Res. (N)=	3.00
U.H. Tp(hrs)=	1.23		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.279

PEAK FLOW (cms) =	0.121 (i)
TIME TO PEAK (hrs) =	4.417
RUNOFF VOLUME (mm) =	14.948
TOTAL RAINFALL (mm) =	56.500
RUNOFF COEFFICIENT =	0.265

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6102)  
ID= 1 DT= 5.0 min

Area (ha)=	12.10	Dir. Conn.(%) =	16.00
Total Imp(%) =	27.00		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.27	8.83
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	284.02	40.00
Mannings n =	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	33.10
over (min)	5.00	20.00
Storage Coeff. (min)=	5.03 (ii)	18.55 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.21	0.06

		*TOTALS*
PEAK FLOW (cms) =	0.45	0.44
TIME TO PEAK (hrs) =	3.00	3.25
RUNOFF VOLUME (mm) =	50.50	17.03
TOTAL RAINFALL (mm) =	56.50	56.50

RUNOFF COEFFICIENT = 0.89 0.30 0.40

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 70.0 Ia = Dep. 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 (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6101):	9.00	0.121	4.42	14.95
+ ID2= 2 ( 6102):	12.10	0.733	3.00	22.38
-----				
ID = 3 ( 0136):	21.10	0.746	3.00	19.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0127):	34.70	0.981	3.00	19.30
+ ID2= 2 ( 0136):	21.10	0.746	3.00	19.21
-----				
ID = 3 ( 0128):	55.80	1.727	3.00	19.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	55.80	1.727	3.00	19.27
+ ID2= 2 ( 0603):	111.60	1.061	4.67	13.52
-----				
ID = 1 ( 0128):	167.40	2.035	3.00	15.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)

IN= 2---> OUT= 1 Routing time step (min) = 5.00

----- DATA FOR SECTION (1414.9) ----->>

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

----- TRAVEL TIME TABLE ----->>

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

----- hydrograph ----->> <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL



(ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0128) 167.40 2.03 3.00 15.43 1.86 0.09  
 OUTFLOW: ID= 1 ( 0604) 167.40 1.26 4.83 15.42 1.65 0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
 NASHYD ( 6041) Area (ha)= 1.70 Curve Number (CN)= 79.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 4.12

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 0.016

PEAK FLOW (cms) = 0.012 (i)  
 TIME TO PEAK (hrs) = 7.583  
 RUNOFF VOLUME (mm) = 20.270  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.359

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6042) Area (ha) = 22.30  
 ID= 1 DT= 5.0 min Total Imp(%) = 65.00 Dir. Conn.(%) = 53.00

IMPERVIOUS (i)  
 Surface Area (ha) = 14.49 7.81  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 385.57 40.00  
 Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 58.52  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 6.04 (ii) 16.80 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.19 0.06

\*TOTALS\*

PEAK FLOW (cms) = 2.69 0.73 3.189 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.17 3.00  
 RUNOFF VOLUME (mm) = 50.50 25.34 38.67  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.45 0.68

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 6041):	1.70	0.012	7.58	20.27
+ ID2= 2 ( 6042):	22.30	3.189	3.00	38.67
ID = 3 ( 0129):	24.00	3.189	3.00	37.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0130)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0129):	24.00	3.189	3.00	37.37
+ ID2= 2 ( 0604):	167.40	1.259	4.83	15.42
ID = 3 ( 0130):	191.40	3.765	3.00	18.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2----> OUT= 1 Routing time step (min)= 5.00

DATA FOR SECTION ( 801.4)

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700 Main Channel
258.15	80.95	0.0700 Main Channel

259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

hydrograph  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
 INFLOW : ID= 2 ( 0130) 191.40 3.76 3.00 18.18 0.93 0.30  
 OUTFLOW: ID= 1 ( 0605) 191.40 1.58 3.58 18.18 0.79 0.25

CALIB  
 NASHYD ( 6111) Area (ha) = 0.60 Curve Number (CN) = 77.0  
 ID= 1 DT= 5.0 min Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 1.08

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----



TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 17.37 35.26  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.31 0.62

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

93.32 80.00 0.1100  
 95.04 80.45 0.1100  
 102.72 80.66 0.1100  
 110.13 78.93 0.1100 / 0.0700 Main Channel  
 118.05 78.63 0.0700 Main Channel  
 124.40 78.89 0.0700 / 0.1100 Main Channel  
 132.18 79.61 0.1100  
 139.34 79.23 0.1100  
 144.67 79.43 0.1100  
 149.63 79.98 0.1100  
 153.42 79.79 0.1100  
 158.56 80.58 0.1100  
 176.89 81.15 0.1100

ADD HYD ( 0131)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0051): 0.40 0.005 4.50 13.11  
 + ID2= 2 ( 0052): 15.50 2.141 3.00 35.26  
 ID = 3 ( 0131): 15.90 2.141 3.00 34.70

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 ( 0131): 15.90 2.141 3.00 34.70  
 + ID2= 2 ( 0139): 202.80 2.589 3.00 19.14  
 ID = 3 ( 0132): 218.70 4.731 3.00 20.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.70	4.73	3.00	20.28	0.59	0.65
OUTFLOW: ID= 1 ( 0530)	218.70	3.56	3.08	20.28	0.52	0.57

CALIB  
 STANDHYD ( 5302) Area (ha)= 5.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 48.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.48 2.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 36.65  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.03 (ii) 17.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.06

PEAK FLOW (cms)= 0.66 0.13 0.750 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 16.79 32.97  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.30 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0530): 218.70 3.556 3.08 20.28  
 + ID2= 2 ( 5302): 5.80 0.750 3.00 32.97  
 ID = 3 ( 0134): 224.50 4.045 3.00 20.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0120): 273.90 6.640 3.00 20.88  
 + ID2= 2 ( 0134): 224.50 4.045 3.00 20.60  
 ID = 3 ( 0135): 498.40 10.685 3.00 20.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700 Main Channel
85.82	76.28	0.0700 Main Channel
89.97	76.89	0.0700 Main Channel













# Ultimate - with BSS1

```

=====
V V I SSSS U U A L (v 6.2.2018)
V V I SS U U A A L
V V I SS U U A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.
    
```

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
f51af81c-ffc2-4a9d-a058-c8f1233c78b9\
Summary filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
f51af81c-ffc2-4a9d-a058-c8f1233c78b9\

DATE: 04-10-2024 TIME: 01:42:28

USER:

COMMENTS:
    
```

\*\*\*\*\* SIMULATION : 100yrHope\_SCSII\_6hr.stm \*\*\*\*\*

```

| READ STORM | Filename: C:\Users\jannaormond\AppData\Local\Temp\
    
```

```

PEAK FLOW (cms) = 3.787 (i)
TIME TO PEAK (hrs) = 3.833
RUNOFF VOLUME (mm) = 38.043
TOTAL RAINFALL (mm) = 101.620
RUNOFF COEFFICIENT = 0.374

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.
    
```

```

| CALIB |
| STANDHYD ( 5012) | Area (ha) = 37.32
| ID= 1 DT= 5.0 min | Total Imp(%) = 38.00 Dir. Conn.(%) = 24.00
    
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha) = 14.18 23.14
Dep. Storage (mm) = 6.00 8.00
Average Slope (%) = 1.00 1.00
Length (m) = 498.80 40.00
Mannings n = 0.013 0.250
    
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 107.14
over (min) = 5.00 15.00
Storage Coeff. (min)= 5.56 (ii) 14.01 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
    
```

```

| Ptotal=101.62 mm | fc287717-ea81-4509-917c-0fddd7b9a7f0\ff8cc32c
| Comments: Mount Hope-6 hour SCS Distribution Desig
    
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.09	1.50	10.23	3.00	22.51	4.50	6.14
0.17	4.09	1.67	10.23	3.17	22.51	4.67	6.14
0.33	4.09	1.83	10.23	3.33	22.51	4.83	6.14
0.50	6.14	2.00	12.28	3.50	10.23	5.00	4.09
0.67	6.14	2.17	12.28	3.67	10.23	5.17	4.09
0.83	6.14	2.33	12.28	3.83	10.23	5.33	4.09
1.00	6.14	2.50	61.38	4.00	8.18	5.50	4.09
1.17	6.14	2.67	110.48	4.17	8.18	5.67	4.09
1.33	6.14	2.83	159.59	4.33	8.18		

```

| CALIB |
| NASHYD ( 5011) | Area (ha) = 80.20 Curve Number (CN) = 65.0
| ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00
| U.H. Tp(hrs) = 0.85
    
```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 3.621

```

Unit Hyd. peak (cms) = 0.20 0.08
*TOTALS*
PEAK FLOW (cms) = 3.73 3.85 6.934 (iii)
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 95.62 43.75 56.20
TOTAL RAINFALL (mm) = 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.43 0.55
    
```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 5011): 80.20 3.787 3.83 38.04
+ ID2= 2 ( 5012): 37.32 6.934 3.00 56.20
-----
ID = 3 ( 0100): 117.52 7.862 3.00 43.81
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0502) |
| IN= 2--> OUT= 1 | Routing time step (min) = 5.00
    
```

<----- DATA FOR SECTION (1537.5) ----->			
Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	

155.81 88.53 0.1100  
 183.05 88.85 0.1100  
 187.19 88.84 0.1100  
 211.21 88.88 0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.00
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

----- hydrograph ----- <-pipe / channel->

AREA	OPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0100)	117.52	7.86	3.00	43.81	1.24
OUTFLOW: ID= 1 ( 0502)	117.52	4.95	3.92	43.81	1.12

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5691)	2.30	69.3
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.07	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.315 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 42.025  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.414

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 5092)	1.73	50.60
ID= 1 DT= 5.0 min	Total Imp(%)= 50.60	Dir. Conn.(%)= 50.60

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 0.88	0.85
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 107.39	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09

0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.500 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 39.092  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 5021)	3.67	68.8
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.43	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09

1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.63  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 2.21 (ii) 10.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.39 0.18 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.542 (iii)  
 RUNOFF VOLUME (mm)= 95.62 58.31 77.18  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.57 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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)	Dir. Conn.(%)
STANDHYD ( 5082)	0.71	64.00
ID= 1 DT= 5.0 min	Total Imp(%)= 73.00	Dir. Conn.(%)= 64.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 0.52	0.19
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 68.80	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14

0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.18  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.69 (ii) 9.88 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.11

\*TOTALS\*  
PEAK FLOW (cms)= 0.20 0.04 0.243 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 43.76 76.94  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.43 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 5682)  
ID= 1 DT= 5.0 min

Area (ha)= 0.53  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.34		0.19
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	59.44		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 75.62  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.55 (ii) 11.27 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.33 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.15 0.02 0.172 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 37.55 75.29  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.37 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0501)  
ID= 1 DT= 5.0 min

Area (ha)= 6.23  
Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0510)  
ID= 1 DT= 5.0 min

Area (ha)= 0.76  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.59		0.17
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	71.18		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 116.63  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 1.73 (ii) 6.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.15

\*TOTALS\*  
PEAK FLOW (cms)= 0.26 0.04 0.307 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 58.31 87.41  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	2.62		3.61
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	203.80		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 53.82  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 3.25 (ii) 14.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 1.14 0.35 1.424 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 95.62 31.92 58.67  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.31 0.58

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.

RUNOFF COEFFICIENT = 0.94 0.57 0.86

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5752)  
ID= 1 DT= 5.0 min

Area (ha)= 0.78  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.51 0.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 72.11 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 102.89  
over (min) 5.00 15.00

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 117.49  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.34 (ii) 10.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.60 0.15 0.730 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 58.77 82.72  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.58 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0501):	6.23	1.424	3.00 58.67
+ ID2= 2 ( 5021):	3.67	0.315	3.33 42.03
ID = 3 ( 0481):	9.90	1.601	3.00 52.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	9.90	1.601	3.00 52.50
+ ID2= 2 ( 5082):	0.71	0.243	3.00 76.94
ID = 1 ( 0481):	10.61	1.844	3.00 54.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Storage Coeff. (min)= 1.74 (ii) 10.33 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.22 0.05 0.267 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 51.14 80.04  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.50 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.6 Ia = Dep. 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 ( 5282)  
ID= 1 DT= 5.0 min

Area (ha)= 2.08  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

ADD HYD ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	10.61	1.844	3.00 54.14
+ ID2= 2 ( 5092):	1.73	0.542	3.00 77.18
ID = 3 ( 0481):	12.34	2.386	3.00 57.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	12.34	2.386	3.00 57.37
+ ID2= 2 ( 0510):	0.76	0.307	3.00 87.41
ID = 1 ( 0481):	13.10	2.693	3.00 59.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	13.10	2.693	3.00 59.11
+ ID2= 2 ( 5282):	2.08	0.730	3.00 82.72
ID = 3 ( 0481):	15.18	3.423	3.00 62.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	15.18	3.423	3.00 62.35
+ ID2= 2 ( 5682):	0.53	0.172	3.00 75.29
ID = 1 ( 0481):	15.71	3.595	3.00 62.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.34 (ii) 12.21 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.60 0.09  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 36.14 74.80  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.36 0.74

\*TOTALS\*  
 0.668 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00  
 -----

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09

0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09  
 0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
 1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
 1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.24 (ii) 6.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*  
 0.682 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0267) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0519): 2.08 0.668 3.00 74.80  
 + ID2= 2 ( 0529): 1.80 0.682 3.00 82.53  
 -----  
 ID = 3 ( 0267): 3.88 1.349 3.00 78.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0267) |  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0267): 3.88 1.349 3.00 78.39  
 + ID2= 2 ( 0580): 1.87 0.604 3.00 75.29

-----  
 ID = 1 ( 0267): 5.75 1.953 3.00 77.38  
 -----

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0265) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0267): 5.75 1.953 3.00 77.38  
 + ID2= 2 ( 0522): 3.31 0.454 3.00 35.99  
 -----  
 ID = 3 ( 0265): 9.06 2.407 3.00 62.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0523) | Area (ha)= 6.61  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00  
 -----

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09

1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 216.34  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.31 (ii) 9.69 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.26 0.11

\*TOTALS\*  
 2.137 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0260) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0265): 9.06 2.407 3.00 62.26  
 + ID2= 2 ( 0523): 6.61 2.137 3.00 75.50  
 -----  
 ID = 3 ( 0260): 15.67 4.544 3.00 67.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0525) | Area (ha)= 1.45  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00  
 -----

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.94 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 98.32 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 101.73  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.10 (ii) 10.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.42 0.09 0.494 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 50.55 79.84  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.50 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0272)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 275.07  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.19 (ii) 7.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.13

\*TOTALS\*

PEAK FLOW (cms)= 0.39 0.24 0.626 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 72.75 84.64  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.72 0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0270)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0264):	24.34	6.389	3.00	65.23
+ ID2= 2 ( 0527):	1.68	0.626	3.00	84.64
ID = 3 ( 0270):	26.02	7.015	3.00	66.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	STANDHYD ( 5202)	Area (ha)=	Total Imp(%)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		2.27	61.00	61.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	1.38	0.89
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	123.02	40.00
Mannings n =	0.013	0.250

ID1= 1 ( 0260):	15.67	4.544	3.00	67.85
+ ID2= 2 ( 0525):	1.45	0.494	3.00	79.84
ID = 3 ( 0272):	17.12	5.038	3.00	68.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

ADD HYD ( 0264)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0272):	17.12	5.038	3.00	68.86
+ ID2= 2 ( 0524):	7.22	1.440	3.00	56.61
ID = 3 ( 0264):	24.34	6.389	3.00	65.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	STANDHYD ( 0527)	Area (ha)=	Total Imp(%)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		1.68	76.00	52.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	1.28	0.40
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	105.83	40.00
Mannings n =	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 107.32  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.40 (ii) 10.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.61 0.17 0.753 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 53.41 79.16  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0273)
-----------------

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0270):	26.02	7.015	3.00	66.48
+ ID2= 2 ( 5202):	2.27	0.753	3.00	79.16
-----				
ID = 3 ( 0273):	28.29	7.768	3.00	67.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0274)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1400	0.8343
	0.0195	0.2416	0.2360	1.0014
	0.0700	0.5564	0.3420	1.6616

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0273)	28.290	7.768	3.00	67.50
OUTFLOW: ID= 1 ( 0274)	28.290	0.328	5.17	67.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.22  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.5752

CALIB				
STANDHYD ( 0526)	Area (ha)=	0.94		
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)=	78.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.73	0.21		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	79.16	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.21  
 TIME SHIFT OF PEAK FLOW (min)= 15.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0514

CALIB				
STANDHYD ( 0574)	Area (ha)=	1.44		
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)=	78.00
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	1.12	0.32		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	97.98	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 over (min)= 5.00  
 Storage Coeff. (min)= 2.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.31  
 PEAK FLOW (cms)= 0.50  
 \*TOTALS\*  
 0.50 0.06 0.559 (iii)

0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 over (min)= 5.00  
 Storage Coeff. (min)= 1.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.32  
 PEAK FLOW (cms)= 0.32  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 95.62  
 TOTAL RAINFALL (mm)= 101.62  
 RUNOFF COEFFICIENT = 0.94  
 \*TOTALS\*  
 0.374 (iii)  
 3.00  
 86.37  
 101.62  
 0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0279)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0476	0.0432
	0.0096	0.0220	0.0579	0.0480
	0.0206	0.0306	0.0671	0.0528
	0.0297	0.0360	0.0000	0.0000
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0526)	0.940	0.374	3.00	86.37
OUTFLOW: ID= 1 ( 0279)	0.940	0.064	3.25	85.75

TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 95.62  
 TOTAL RAINFALL (mm)= 101.62  
 RUNOFF COEFFICIENT = 0.94

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0276)	OVERFLOW IS OFF			
IN= 2---> OUT= 1				
DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0730	0.0642
	0.0150	0.0327	0.0890	0.0712
	0.0310	0.0455	0.1030	0.0784
	0.0450	0.0536	0.0000	0.0000
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0574)	1.440	0.559	3.00	84.49
OUTFLOW: ID= 1 ( 0276)	1.440	0.099	3.25	84.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 17.76  
 TIME SHIFT OF PEAK FLOW (min)= 15.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0766

ADD HYD ( 0275)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0276):	1.44	0.099	3.25	84.10
+ ID2= 2 ( 0279):	0.94	0.064	3.25	85.75
-----				
ID = 3 ( 0275):	2.38	0.164	3.25	84.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0571)	Area (ha)=	19.59		
ID= 1 DT= 5.0 min	Total Imp(%)=	68.00	Dir. Conn.(%)=	50.00



-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 13.32 6.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 361.39 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 151.76  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.58 (ii) 11.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.09

PEAK FLOW (cms)= 4.17 1.61 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 5.53 (iii)  
 RUNOFF VOLUME (mm)= 95.62 49.14 72.38  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.48 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.6 Ia = Dep. 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 ( 0572) | Area (ha)= 11.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.03 3.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 274.59 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 218.54  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.88 (ii) 10.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09

PEAK FLOW (cms)= 2.44 1.33 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 3.610 (iii)  
 RUNOFF VOLUME (mm)= 95.62 65.60 80.61

TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.65 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0282)  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0571): 19.59 5.535 3.00 72.38  
 + ID2= 2 ( 0572): 11.31 3.610 3.00 80.61  
 ID = 3 ( 0282): 30.90 9.144 3.00 75.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 CALIB  
 STANDHYD ( 0573) | Area (ha)= 2.66  
 ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.00 1.06  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 133.17 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09

0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09  
 0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09  
 0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
 1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
 1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 98.49  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.52 (ii) 11.26 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.70 0.18 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.855 (iii)  
 RUNOFF VOLUME (mm)= 95.62 48.91 76.93  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.48 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.8 Ia = Dep. 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 ( 0285)  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0282): 30.90 9.144 3.00 75.39  
 + ID2= 2 ( 0573): 2.66 0.855 3.00 76.93  
 ID = 3 ( 0285): 33.56 10.000 3.00 75.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 RESERVOIR ( 0280) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1 |  
DT= 5.0 min
 (cms) (ha.m.) | (cms) (ha.m.)  
 0.0000 0.0000 | 0.2300 1.1312

	0.0230	0.3704	0.2810	1.3850
	0.0900	0.8066	0.4120	2.2335
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0285)	33.560	10.000	3.00	75.51
OUTFLOW: ID= 1 ( 0280)	33.560	0.395	5.25	74.78

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.95  
 TIME SHIFT OF PEAK FLOW (min)=135.00  
 MAXIMUM STORAGE USED (ha.m.)= 2.1254

```

-----
| ADD HYD ( 0102) |
| 3 + 2 = 1 |
-----
ID1= 3 ( 0102): AREA 83.02 QPEAK 4.874 TPEAK 3.00 R.V. 69.29
+ ID2= 2 ( 0502): 117.52 4.947 3.92 43.81
=====
ID = 1 ( 0102): 200.54 7.662 3.00 54.36
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ROUTE CHN( 0503) |
| IN= 2----> OUT= 1 |
-----
Routing time step (min)'= 5.00
  
```

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89

```

-----
| ADD HYD ( 0102) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0274): AREA 28.29 QPEAK 0.328 TPEAK 5.17 R.V. 67.26
+ ID2= 2 ( 0275): 2.38 0.164 3.25 84.76
=====
ID = 3 ( 0102): 30.67 0.460 3.58 68.61
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0102) |
| 3 + 2 = 1 |
-----
ID1= 3 ( 0102): AREA 30.67 QPEAK 0.460 TPEAK 3.58 R.V. 68.61
+ ID2= 2 ( 0280): 33.56 0.395 5.25 74.78
=====
ID = 1 ( 0102): 64.23 0.829 3.92 71.83
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0102) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0102): AREA 64.23 QPEAK 0.829 TPEAK 3.92 R.V. 71.83
+ ID2= 2 ( 0481): 18.79 4.362 3.00 60.60
=====
ID = 3 ( 0102): 83.02 4.874 3.00 69.29
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<---- hydrograph ----> <-pipe / channel->

INFLOW : ID= 2 ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
200.54	200.54	7.66	3.00	54.36	1.43	1.18
OUTFLOW: ID= 1 ( 0503)	200.54	6.81	3.08	54.36	1.36	1.14

```

-----
| CALIB |
| STANDHYD ( 5032) |
| ID= 1 DT= 5.0 min |
-----
Area (ha)= 13.80
Total Imp(%)= 76.00
Dir. Conn.(%)= 67.00
  
```

Surface Area (ha)=	IMPERVIOUS (mm)=	PERVIOUS (i) (mm)=
10.49	6.00	3.31
1.00	1.00	1.00
303.32	40.00	40.00
0.013	0.250	

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09

1.003	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 145.90  
 over (min)= 5.00  
 Storage Coeff. (min)= 4.12 (ii) 8.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.24 0.12

\*TOTALS\*  
 PEAK FLOW (cms)= 3.98 0.96 4.940 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 53.59 81.75  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.53 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 |
-----
ID1= 1 ( 0503): AREA 200.54 QPEAK 6.814 TPEAK 3.08 R.V. 54.36
+ ID2= 2 ( 5032): 13.80 4.940 3.00 81.75
=====
ID = 3 ( 0104): 214.34 11.370 3.00 56.12
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ROUTE CHN( 0504) |
| IN= 2----> OUT= 1 |
-----
Routing time step (min)'= 5.00
  
```

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900

122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

CALIB			
STANDHYD ( 5042)	Area (ha)=	7.70	
ID= 1 DT= 5.0 min	Total Imp(%)=	75.00 Dir. Conn.(%)= 65.00	
-----			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	5.77	1.92
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	226.57	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

		<--- hydrograph --->			<-pipe / channel->	
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	214.34	11.37	3.00	56.12	0.86	0.36
OUTFLOW : ID= 1 ( 0504)	214.34	8.10	3.17	56.12	0.81	0.34

-----

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0106)							
	1	2	3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):				214.34	8.097	3.17	56.12
+ ID2= 2 ( 5042):				7.70	2.728	3.00	79.91
-----							
ID = 3 ( 0106):				222.04	9.564	3.00	56.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 5212)	Area (ha)=	15.70	
ID= 1 DT= 5.0 min	Total Imp(%)=	75.00 Dir. Conn.(%)= 66.00	
-----			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area	(ha)=	11.78	3.93
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	323.52	40.00
Mannings n	=	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09

1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)=	159.59	161.71	
over (min)	5.00	10.00	
Storage Coeff. (min)=	4.29 (ii)	9.17 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.23	0.12	
*TOTALS*			
PEAK FLOW (cms)=	4.44	1.27	5.713 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	95.62	60.49	83.68
TOTAL RAINFALL (mm)=	101.62	101.62	101.62
RUNOFF COEFFICIENT =	0.94	0.60	0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 0114)							
	1	2	3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):				222.04	9.564	3.00	56.94
+ ID2= 2 ( 5212):				15.70	5.713	3.00	83.68
-----							
ID = 3 ( 0114):				237.74	15.277	3.00	58.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)			
IN= 2---> OUT= 1			
Routing time step (min)'= 5.00			
-----			
<----- DATA FOR SECTION ( 553.6) ----->			
Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	

69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0114)	237.74	15.28	3.00	58.71	0.94
OUTFLOW: ID= 1 ( 0505)	237.74	13.62	3.00	58.71	0.88

CALIB

STANDHYD ( 5052) | Area (ha)= 15.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 11.77 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	11.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 132.71  
 over (min)= 5.00 10.00  
 Storage Coeff. (min)= 4.30 (ii) 9.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.23 0.12

PEAK FLOW (cms)= 4.43 1.07 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.00 5.495 (iii)  
 RUNOFF VOLUME (mm)= 95.62 49.62 3.00  
 TOTAL RAINFALL (mm)= 101.62 101.62 79.52  
 RUNOFF COEFFICIENT = 0.94 0.49 101.62 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 68.0 Ia = Dep. 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 ( 0108)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0505):	237.74	13.622	3.08	58.71
+ ID2= 2 ( 5052):	15.90	5.495	3.00	79.52
ID = 3 ( 0108):	253.64	18.862	3.00	60.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506) | Routing time step (min)'= 5.00  
 IN= 2---> OUT= 1

DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	Channel
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56

0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0108)	253.64	18.86	3.00	60.01	1.82
OUTFLOW: ID= 1 ( 0506)	253.64	15.64	3.08	60.01	1.77

STANDHYD ( 5062) | Area (ha)= 11.70  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.78 2.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 279.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14

0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 149.80  
over (min) 5.00 10.00  
Storage Coeff. (min)= 3.92 (ii) 8.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.24 0.12

PEAK FLOW (cms)= 3.28 0.88 4.160 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 54.10 81.09  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.53 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0110)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0506):	253.64	15.638	3.08	60.81
+ ID2= 2 ( 5062):	11.70	4.160	3.00	81.09
=====				
ID = 3 ( 0110):	265.34	18.133	3.00	60.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD ( 5102)	
Area	(ha)= 1.70

|ID= 1 DT= 5.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

			IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.09	0.61	
Dep. Storage	(mm)=	6.00	8.00	
Average Slope	(%)=	1.00	1.00	
Length	(m)=	106.46	40.00	
Mannings n	=	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 125.18  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.20 (ii) 10.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.10

PEAK FLOW (cms)= 0.39 0.14 0.507 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 47.19 72.37  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.46 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511)	
IN= 2----> OUT= 1	
Routing time step (min)=	5.00

<----- DATA FOR SECTION ( 553.6) ----->				
Distance	Elevation	Manning		
0.00	81.24	0.1100		
33.01	80.98	0.1100		
49.97	81.27	0.1100		
54.18	80.35	0.1100		
60.88	81.23	0.1100 / 0.0700	Main Channel	
69.13	79.02	0.0700	Main Channel	
92.42	79.04	0.0700	Main Channel	
98.70	80.89	0.0700 / 0.1100	Main Channel	
128.88	81.13	0.1100		
199.00	81.23	0.1100		

<----- TRAVEL TIME TABLE ----->					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ---->		<-pipe / channel->			
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 5102)	1.70	0.51	3.00	72.37	0.10 0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.37	3.00	72.34	0.07 0.24

| CALIB |  
| STANDHYD ( 5112) | Area (ha)= 3.00  
|ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

			IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.07	0.93	
Dep. Storage	(mm)=	6.00	8.00	
Average Slope	(%)=	1.00	1.00	
Length	(m)=	141.42	40.00	
Mannings n	=	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 142.77  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.61 (ii) 10.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.10

PEAK FLOW (cms)= 0.77 0.24 0.972 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 95.62 53.17 77.79

TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.52 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0117)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0511):	1.70	0.367	3.00	72.34
+ ID2= 2 ( 5112):	3.00	0.972	3.00	77.79
=====				
ID = 3 ( 0117):	4.70	1.339	3.00	75.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) | Routing time step (min)'= 5.00  
 IN= 2----> OUT= 1 |

<----- DATA FOR SECTION ( 484.2 ) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84

0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 141.05  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.82 (ii) 10.39 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.09

\*TOTALS\*

PEAK FLOW (cms)= 0.98 0.31 1.247 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 52.94 77.27  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.52 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0119)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0512):	4.70	0.822	3.08	75.75
+ ID2= 2 ( 5122):	3.90	1.247	3.00	77.27
=====				
ID = 3 ( 0119):	8.60	1.969	3.00	76.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0110):	265.34	18.133	3.00	60.94
+ ID2= 2 ( 0119):	8.60	1.969	3.00	76.44

0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0117)	4.70	1.34	3.00	75.82	0.87	0.36
OUTFLOW: ID= 1 ( 0512)	4.70	0.82	3.08	75.75	0.76	0.45

CALIB | STANDHYD ( 5122) | Area (ha)= 3.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00

IMPERVIOUS (i)  
 Surface Area (ha)= 2.65 1.25  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 161.25 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09

\*\*\*\*\*  
 ID = 3 ( 0120): 273.94 20.102 3.00 61.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB | NASHYD ( 6011) | Area (ha)= 44.10 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)	TIME (hrs)	RAIN (mm/hr)
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.942 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 35.157  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB | STANDHYD ( 6012) | Area (ha)= 11.00

|ID= 1 DT= 5.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.08 7.92
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 270.00 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 159.59 91.88
over (min)= 5.00 15.00
Storage Coeff. (min)= 3.85 (ii) 12.84 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.08

\*TOTALS\*
PEAK FLOW (cms)= 0.76 1.16 1.726 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 39.35 48.35
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.39 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 62.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with 5 columns: ADD HYD ( 0124), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show data for ID1= 1 ( 6011) and ID2= 2 ( 6012).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with 4 columns: CALIB, NASHYD ( 6021), Area (ha), Curve Number (CN)= 62.0. Rows show data for ID= 1 DT= 5.0 min.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals from 0.083 to 1.500 hours.

Unit Hyd Qpeak (cms)= 1.734 (i)
PEAK FLOW (cms)= 1.734 (i)
TIME TO PEAK (hrs)= 4.000
RUNOFF VOLUME (mm)= 35.157
TOTAL RAINFALL (mm)= 101.620
RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Storage Coeff. (min)= 4.04 (ii) 12.94 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.24 0.08
\*TOTALS\*
PEAK FLOW (cms)= 1.28 1.26 2.325 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 39.77 52.62
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.39 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 62.0 Ia = Dep. 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 ( 6022) Area (ha)= 12.90
ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00
IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.51 8.38
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 293.26 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 159.59 94.24
over (min)= 5.00 15.00

Table with 5 columns: ADD HYD ( 0125), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show data for ID1= 1 ( 6021) and ID2= 2 ( 6022).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with 5 columns: ADD HYD ( 0126), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show data for ID1= 1 ( 0124) and ID2= 2 ( 0125).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)
IN= 2--> OUT= 1
Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->
Distance Elevation Manning
0.00 92.58 0.1400





\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0615) | Area (ha)= 2.14  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.67 0.47  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 119.44 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 86.94  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.36 (ii) 6.70 (ii)

1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 259.23  
over (min) = 5.00 10.00  
Storage Coeff. (min)= 2.11 (ii) 8.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.13

PEAK FLOW (cms)= 0.33 0.18 0.507 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 58.82 77.22  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.58 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.81 0.05  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 75.72 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14

Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14  
\*TOTALS\*  
PEAK FLOW (cms)= 0.74 0.09 0.824 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 43.13 84.07  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.42 0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0618) | Area (ha)= 1.49  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.16 0.33  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 99.67 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09

0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
over (min) = 5.00 5.00  
Storage Coeff. (min)= 1.79 (ii) 4.19 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.32 0.24

PEAK FLOW (cms)= 0.36 0.01 0.368 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 36.14 92.05  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.36 0.91

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0617) | Area (ha)= 2.31  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.80 0.51  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 124.10 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 286.12  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.41 (ii) 8.12 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.13

\*TOTALS\*  
 PEAK FLOW (cms)= 0.51 0.31 0.818 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 65.65 80.63  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.65 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0290)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0614):	1.50	0.474	3.00	72.53
+ ID2= 2 ( 0615):	2.14	0.824	3.00	84.07

ID = 3 ( 0290): 3.64 1.298 3.00 79.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	3.64	1.298	3.00	79.31
+ ID2= 2 ( 0617):	2.31	0.818	3.00	80.63
ID = 1 ( 0290):	5.95	2.116	3.00	79.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	5.95	2.116	3.00	79.83
+ ID2= 2 ( 0618):	1.49	0.507	3.00	77.22
ID = 3 ( 0290):	7.44	2.623	3.00	79.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	7.44	2.623	3.00	79.30
+ ID2= 2 ( 0622):	2.02	0.779	3.00	84.07
ID = 1 ( 0290):	9.46	3.402	3.00	80.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	9.46	3.402	3.00	80.32
+ ID2= 2 ( 06302):	0.86	0.368	3.00	92.05
ID = 3 ( 0290):	10.32	3.770	3.00	81.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)=	1.15
STANDHYD ( 6212)	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.75	0.40	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	87.56	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.96 (ii) 11.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.33 0.05 0.370 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 36.14 74.80  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.36 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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)=	0.85
STANDHYD ( 6232)	Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.55	0.30	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	75.28	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 1.79 (ii) 11.66 (ii)

Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.24 0.04 0.274 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 36.14 74.79  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.36 0.74

\*TOTALS\*

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0288 )  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6212):	1.15	0.370	3.00	74.80
+ ID2= 2 ( 6232):	0.85	0.274	3.00	74.79
ID = 3 ( 0288):	2.00	0.645	3.00	74.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0626 ) Area (ha)= 0.96  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	0.38
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	80.00	40.00
Mannings n =	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14

ADD HYD ( 0297 )  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0297):	12.32	4.414	3.00	80.24
+ ID2= 2 ( 0613):	1.77	0.220	3.08	39.00
ID = 1 ( 0297):	14.09	4.606	3.00	75.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297 )  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0297):	14.09	4.606	3.00	75.06
+ ID2= 2 ( 0626):	0.96	0.319	3.00	79.09
ID = 3 ( 0297):	15.05	4.925	3.00	75.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0302 ) OVERFLOW IS OFF  
 IN= 2--> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1070	0.3146
0.0150	0.1715	0.7100	0.8031

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0297)	15.050	4.925	3.00	75.32
OUTFLOW: ID= 1 ( 0302)	15.050	0.656	3.58	75.13

PEAK FLOW REDUCTION [Qout/Qin](%)= 13.32  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.7608

CALIB  
 STANDHYD ( 6202 ) Area (ha)= 1.26  
 ID= 1 DT= 5.0 min Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.18	0.08
Dep. Storage (mm)=	6.00	8.00

0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 109.06  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 1.85 (ii) 10.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.25 0.08 0.319 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 54.32 79.09  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.53 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0297 )  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0288):	2.00	0.645	3.00	74.80
+ ID2= 2 ( 0290):	10.32	3.770	3.00	81.30
ID = 3 ( 0297):	12.32	4.414	3.00	80.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Average Slope (%)= 1.00 1.00  
 Length (m)= 91.65 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 72.74  
 over (min)= 5.00 5.00  
 Storage Coeff. (min)= 2.01 (ii) 4.41 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.23

PEAK FLOW (cms)= 0.52 0.01 0.539 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 36.14 92.05  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.36 0.91

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

-----
RESERVOIR( 0292) | OVERFLOW IS OFF
IN= 2----> OUT= 1
DT= 5.0 min
-----
OUTFLOW (cms) | STORAGE (ha.m.) | OUTFLOW (cms) | STORAGE (ha.m.)
0.0000 | 0.0000 | 0.0580 | 0.0848
0.0090 | 0.0366 | 0.0000 | 0.0000

AREA | QPEAK | TPEAK | R.V.
(ha) | (cms) | (hrs) | (mm)
INFLOW : ID= 2 ( 6202) | 1.260 | 0.539 | 3.00 | 92.05
OUTFLOW: ID= 1 ( 0292) | 1.260 | 0.056 | 3.58 | 91.24

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.35
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.0829

```

```

-----
CALIB |
STANDHYD ( 0606) | Area (ha)= 1.98
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
-----
IMPERVIOUS | PERVIOUS (i)
Surface Area (ha)= 1.29 | 0.69
Dep. Storage (mm)= 6.00 | 8.00
Average Slope (%)= 1.00 | 1.00
Length (m)= 114.89 | 40.00
Mannings n = 0.013 | 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14
0.167 4.09 | 1.667 10.23 | 3.167 22.51 | 4.67 6.14
0.250 4.09 | 1.750 10.23 | 3.250 22.51 | 4.75 6.14
0.333 4.09 | 1.833 10.23 | 3.333 22.51 | 4.83 6.14
0.417 4.09 | 1.917 10.23 | 3.417 22.51 | 4.92 6.14
0.500 4.09 | 2.000 10.23 | 3.500 22.51 | 5.00 6.14
0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09

```

```

0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 | 72.74
over (min) | 5.00 | 5.00
Storage Coeff. (min)= 2.37 (ii) | 4.77 (ii)
Unit Hyd. Tpeak (min)= 5.00 | 5.00
Unit Hyd. peak (cms)= 0.30 | 0.22

*TOTALS*
PEAK FLOW (cms)= 0.90 | 0.03 | 0.930 (iii)
TIME TO PEAK (hrs)= 3.00 | 3.00 | 3.00
RUNOFF VOLUME (mm)= 95.62 | 36.14 | 92.05
TOTAL RAINFALL (mm)= 101.62 | 101.62 | 101.62
RUNOFF COEFFICIENT = 0.94 | 0.36 | 0.91

```

```

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 63.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

```

-----
RESERVOIR( 0295) | OVERFLOW IS OFF
IN= 2----> OUT= 1
DT= 5.0 min
-----
OUTFLOW (cms) | STORAGE (ha.m.) | OUTFLOW (cms) | STORAGE (ha.m.)
0.0000 | 0.0000 | 0.1000 | 0.1464
0.0159 | 0.0631 | 0.0000 | 0.0000

AREA | QPEAK | TPEAK | R.V.
(ha) | (cms) | (hrs) | (mm)
INFLOW : ID= 2 ( 0612) | 2.180 | 0.930 | 3.00 | 92.05
OUTFLOW: ID= 1 ( 0295) | 2.180 | 0.096 | 3.58 | 91.59

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.37
TIME SHIFT OF PEAK FLOW (min)= 35.00
MAXIMUM STORAGE USED (ha.m.)= 0.1433

```

```

1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 | 72.74
over (min) | 5.00 | 5.00
Storage Coeff. (min)= 2.30 (ii) | 12.17 (ii)
Unit Hyd. Tpeak (min)= 5.00 | 15.00
Unit Hyd. peak (cms)= 0.30 | 0.09

*TOTALS*
PEAK FLOW (cms)= 0.57 | 0.08 | 0.636 (iii)
TIME TO PEAK (hrs)= 3.00 | 3.00 | 3.00
RUNOFF VOLUME (mm)= 95.62 | 36.14 | 74.80
TOTAL RAINFALL (mm)= 101.62 | 101.62 | 101.62
RUNOFF COEFFICIENT = 0.94 | 0.36 | 0.74

```

```

***** WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 63.0 Ia = Dep. 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 ( 0612) | Area (ha)= 2.18
ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00
-----
IMPERVIOUS | PERVIOUS (i)
Surface Area (ha)= 2.05 | 0.13
Dep. Storage (mm)= 6.00 | 8.00
Average Slope (%)= 1.00 | 1.00
Length (m)= 120.55 | 40.00
Mannings n = 0.013 | 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14
0.167 4.09 | 1.667 10.23 | 3.167 22.51 | 4.67 6.14
0.250 4.09 | 1.750 10.23 | 3.250 22.51 | 4.75 6.14
0.333 4.09 | 1.833 10.23 | 3.333 22.51 | 4.83 6.14
0.417 4.09 | 1.917 10.23 | 3.417 22.51 | 4.92 6.14
0.500 4.09 | 2.000 10.23 | 3.500 22.51 | 5.00 6.14
0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09

```

```

-----
ADD HYD ( 0306) |
1 + 2 = 3 |
-----
AREA | QPEAK | TPEAK | R.V.
(ha) | (cms) | (hrs) | (mm)
ID1= 1 ( 0292): | 1.26 | 0.056 | 3.58 | 91.24
+ ID2= 2 ( 0295): | 2.18 | 0.096 | 3.58 | 91.59
=====
ID = 3 ( 0306): | 3.44 | 0.152 | 3.58 | 91.46

```

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

```

-----
ADD HYD ( 0306) |
3 + 2 = 1 |
-----
AREA | QPEAK | TPEAK | R.V.
(ha) | (cms) | (hrs) | (mm)
ID1= 3 ( 0306): | 3.44 | 0.152 | 3.58 | 91.46
+ ID2= 2 ( 0606): | 1.98 | 0.636 | 3.00 | 74.80
=====
ID = 1 ( 0306): | 5.42 | 0.752 | 3.00 | 85.37

```

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

```

-----
ROUTE CHN( 0304) |
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00
-----

```

```

----- DATA FOR SECTION (2135.9) -----
Distance | Elevation | Manning
0.00 | 92.50 | 0.0700
36.57 | 92.00 | 0.0700
90.03 | 91.00 | 0.0700
124.58 | 90.00 | 0.0700 / 0.0350 Main Channel
128.34 | 89.59 | 0.0350 Main Channel
129.84 | 89.59 | 0.0350 Main Channel
132.39 | 90.00 | 0.0350 / 0.0700 Main Channel
163.76 | 91.00 | 0.0700
187.47 | 91.00 | 0.0700
203.83 | 91.00 | 0.0700
306.44 | 92.00 | 0.0700

```

```

----- TRAVEL TIME TABLE -----
DEPTH | ELEV | VOLUME | FLOW RATE | VELOCITY | TRAV.TIME
(m) | (m) | (cu.m.) | (cms) | (m/s) | (min)
0.10 | 89.69 | .215E+03 | 0.1 | 0.46 | 33.36
0.20 | 89.79 | .579E+03 | 0.4 | 0.67 | 22.75
0.31 | 89.90 | .109E+04 | 1.0 | 0.84 | 18.13

```

0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

```

----- hydrograph ----- <-pipe / channel->
AREA      OPEAK  TPEAK  R.V.  MAX DEPTH  MAX VEL
(ha)      (cms)   (hrs)  (mm)  (m)        (m/s)
INFLOW : ID= 2 ( 0306)  5.42  0.75  3.00  85.37  0.26  0.76
OUTFLOW : ID= 1 ( 0304)  5.42  0.41  3.08  85.36  0.20  0.66

```

```

-----
CALIB
STANDHYD ( 0616) | Area (ha)= 0.44
|ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00
-----
IMPERVIOUS  PERVIOUS (i)
Surface Area (ha)= 0.34  0.10
Dep. Storage (mm)= 6.00  8.00
Average Slope (%)= 1.00  1.00
Length (m)= 54.16  40.00
Mannings n = 0.013  0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 4.09 1.583 10.23 3.083 22.51 4.58 6.14
0.167 4.09 1.667 10.23 3.167 22.51 4.67 6.14
0.250 4.09 1.750 10.23 3.250 22.51 4.75 6.14
0.333 4.09 1.833 10.23 3.333 22.51 4.83 6.14
0.417 4.09 1.917 10.23 3.417 22.51 4.92 6.14
0.500 4.09 2.000 10.23 3.500 22.51 5.00 6.14

```

```

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 4.09 1.583 10.23 3.083 22.51 4.58 6.14
0.167 4.09 1.667 10.23 3.167 22.51 4.67 6.14
0.250 4.09 1.750 10.23 3.250 22.51 4.75 6.14
0.333 4.09 1.833 10.23 3.333 22.51 4.83 6.14
0.417 4.09 1.917 10.23 3.417 22.51 4.92 6.14
0.500 4.09 2.000 10.23 3.500 22.51 5.00 6.14
0.583 6.14 2.083 12.28 3.583 10.23 5.08 4.09
0.667 6.14 2.167 12.28 3.667 10.23 5.17 4.09
0.750 6.14 2.250 12.28 3.750 10.23 5.25 4.09
0.833 6.14 2.333 12.28 3.833 10.23 5.33 4.09
0.917 6.14 2.417 12.28 3.917 10.23 5.42 4.09
1.000 6.14 2.500 12.28 4.000 10.23 5.50 4.09
1.083 6.14 2.583 61.38 4.083 8.18 5.58 4.09
1.167 6.14 2.667 61.38 4.167 8.18 5.67 4.09
1.250 6.14 2.750 110.48 4.250 8.18 5.75 4.09
1.333 6.14 2.833 110.48 4.333 8.18 5.83 4.09
1.417 6.14 2.917 159.59 4.417 8.18
1.500 6.14 3.000 159.59 4.500 8.18

```

```

Max.Eff.Inten.(mm/hr)= 159.59 321.04
over (min) = 5.00 10.00
Storage Coeff. (min)= 2.47 (ii) 7.92 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.30 0.13
*TOTALS*
PEAK FLOW (cms)= 0.55 0.38 0.933 (iii)
TIME TO PEAK (hrs)= 3.00 3.00 3.00
RUNOFF VOLUME (mm)= 95.62 75.63 85.63
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.74 0.84

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 0624) | Area (ha)= 0.89
|ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00
-----
IMPERVIOUS  PERVIOUS (i)
Surface Area (ha)= 0.69  0.20
Dep. Storage (mm)= 6.00  8.00

```

0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 109.06
over (min) = 5.00 10.00
Storage Coeff. (min)= 1.47 (ii) 5.81 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.33 0.15

```

```

*TOTALS*
PEAK FLOW (cms)= 0.15 0.02 0.176 (iii)
TIME TO PEAK (hrs)= 3.00 3.00 3.00
RUNOFF VOLUME (mm)= 95.62 54.32 86.53
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.53 0.85

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102) | Area (ha)= 2.49
|ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00
-----

```

```

IMPERVIOUS  PERVIOUS (i)
Surface Area (ha)= 1.94  0.55
Dep. Storage (mm)= 6.00  8.00
Average Slope (%)= 1.00  1.00
Length (m)= 128.84  40.00
Mannings n = 0.013  0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

```

Average Slope (%)= 1.00 1.00
Length (m)= 77.03 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 4.09 1.583 10.23 3.083 22.51 4.58 6.14
0.167 4.09 1.667 10.23 3.167 22.51 4.67 6.14
0.250 4.09 1.750 10.23 3.250 22.51 4.75 6.14
0.333 4.09 1.833 10.23 3.333 22.51 4.83 6.14
0.417 4.09 1.917 10.23 3.417 22.51 4.92 6.14
0.500 4.09 2.000 10.23 3.500 22.51 5.00 6.14
0.583 6.14 2.083 12.28 3.583 10.23 5.08 4.09
0.667 6.14 2.167 12.28 3.667 10.23 5.17 4.09
0.750 6.14 2.250 12.28 3.750 10.23 5.25 4.09
0.833 6.14 2.333 12.28 3.833 10.23 5.33 4.09
0.917 6.14 2.417 12.28 3.917 10.23 5.42 4.09
1.000 6.14 2.500 12.28 4.000 10.23 5.50 4.09
1.083 6.14 2.583 61.38 4.083 8.18 5.58 4.09
1.167 6.14 2.667 61.38 4.167 8.18 5.67 4.09
1.250 6.14 2.750 110.48 4.250 8.18 5.75 4.09
1.333 6.14 2.833 110.48 4.333 8.18 5.83 4.09
1.417 6.14 2.917 159.59 4.417 8.18
1.500 6.14 3.000 159.59 4.500 8.18

```

```

Max.Eff.Inten.(mm/hr)= 159.59 109.06
over (min) = 5.00 10.00
Storage Coeff. (min)= 1.81 (ii) 6.16 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00
Unit Hyd. peak (cms)= 0.32 0.15

```

```

*TOTALS*
PEAK FLOW (cms)= 0.31 0.05 0.355 (iii)
TIME TO PEAK (hrs)= 3.00 3.00 3.00
RUNOFF VOLUME (mm)= 95.62 54.32 86.53
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.53 0.85

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Average Slope (%) = 1.00 1.00  
 Length (m) = 104.56 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ADD HYD ( 0286)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0102):	2.49	0.933	3.00	85.63
+ ID2= 2 ( 0616):	0.44	0.176	3.00	86.53
-----				
ID = 3 ( 0286):	2.93	1.109	3.00	85.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0286):	2.93	1.109	3.00	85.76
+ ID2= 2 ( 0624):	0.89	0.355	3.00	86.53
-----				
ID = 1 ( 0286):	3.82	1.464	3.00	85.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0305)				
IN= 2--> OUT= 1				
DT= 5.0 min				
OVERFLOW IS OFF				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1760	0.2330
	0.0280	0.0927	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0286)	3.820	1.464	3.00	85.94
OUTFLOW: ID= 1 ( 0305)	3.820	0.169	3.58	85.72

PEAK FLOW REDUCTION [Qout/Qin](%)=	11.56
TIME SHIFT OF PEAK FLOW (min)=	35.00
MAXIMUM STORAGE USED (ha.m.)=	0.2268

CALIB			
STANDHYD ( 0619)			
ID= 1 DT= 5.0 min			
Area (ha)=	1.64		
Total Imp(%)=	65.00	Dir. Conn.(%)= 65.00	

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	1.07	0.57
Dep. Storage	6.00	8.00

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 120.10  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.18 (ii) 10.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.47 0.13 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.580 (iii)  
 RUNOFF VOLUME (mm)= 95.62 60.19 3.00  
 TOTAL RAINFALL (mm)= 101.62 101.62 83.21  
 RUNOFF COEFFICIENT = 0.94 0.59 101.62 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0293)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0302):	15.05	0.656	3.58	75.13
+ ID2= 2 ( 0304):	5.42	0.413	3.08	85.36
-----				
ID = 3 ( 0293):	20.47	0.960	3.17	77.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0293):	20.47	0.960	3.17	77.84
+ ID2= 2 ( 0305):	3.82	0.169	3.58	85.72
-----				
ID = 1 ( 0293):	24.29	1.124	3.50	79.08

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0293):	24.29	1.124	3.50	79.08
+ ID2= 2 ( 0619):	1.64	0.580	3.00	83.21
-----				
ID = 3 ( 0293):	25.93	1.501	3.00	79.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 6032)			
ID= 1 DT= 5.0 min			
Area (ha)=	29.63		
Total Imp(%)=	47.00	Dir. Conn.(%)= 32.00	

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	13.93	15.70
Dep. Storage	1.50	8.00
Average Slope	1.00	1.00
Length	444.45	40.00
Mannings n	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 134.53  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 5.19 (ii) 12.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.08

PEAK FLOW (cms)= 3.98 3.47 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 6.929 (iii)  
 RUNOFF VOLUME (mm)= 100.12 52.78 3.00  
 TOTAL RAINFALL (mm)= 101.62 101.62 67.93  
 RUNOFF COEFFICIENT = 0.99 0.52 101.62 0.67

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0128)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0293):	25.93	1.501	3.00	79.34
+ ID2= 2 ( 0603):	111.60	3.287	4.50	38.47

=====  
ID = 3 ( 0128): 137.53 4.239 4.33 46.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0128) |  
3 + 2 = 1
AREA OPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0128): 137.53 4.239 4.33 46.18  
+ ID2= 2 ( 6032): 29.63 6.929 3.00 67.93  
-----  
ID = 1 ( 0128): 167.16 9.315 3.00 50.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ROUTE CHN( 0604) |  
IN= 2----> OUT= 1
Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11

0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 175.99  
over (min) 5.00 10.00  
Storage Coeff. (min)= 4.87 (ii) 9.43 (iii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.22 0.12

\*TOTALS\*  
PEAK FLOW (cms)= 7.01 1.86 8.868 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 95.62 63.99 85.81  
TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
RUNOFF COEFFICIENT = 0.94 0.63 0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 0130) |  
1 + 2 = 3
AREA OPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0604): 167.16 3.928 5.25 50.03  
+ ID2= 2 ( 6042): 24.00 8.868 3.00 85.81  
-----  
ID = 3 ( 0130): 191.16 11.698 3.00 54.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ROUTE CHN( 0605) |  
IN= 2----> OUT= 1
Routing time step (min)'= 5.00

0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel-->  
AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0128) 167.16 9.31 3.00 50.03 2.64 0.08  
OUTFLOW: ID= 1 ( 0604) 167.16 3.93 5.25 50.03 2.32 0.08

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

-----  
| CALIB |  
| STANDHYD ( 6042) |  
ID= 1 DT= 5.0 min
Area (ha)= 24.00  
Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 18.72 5.28  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 400.00 40.00  
Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel-->  
AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 0130) 191.16 11.70 3.00 54.52 1.27 0.32  
 OUTFLOW: ID= 1 ( 0605) 191.16 5.46 3.25 54.52 1.01 0.34

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 57.95 81.31  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.57 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 6112) Area (ha)= 11.40  
 ID= 1 DT= 5.0 min Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.21 3.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 275.68 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 155.13  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.89 (ii) 11.18 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09  
 \*TOTALS\*  
 PEAK FLOW (cms)= 3.05 0.87 3.805 (iii)

ADD HYD ( 0139)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0605): 191.16 5.463 3.25 54.52  
 + ID2= 2 ( 6112): 11.40 3.805 3.00 81.31  
 ID = 3 ( 0139): 202.56 7.831 3.00 56.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6052) Area (ha)= 15.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 11.77 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14

0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 127.05  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 4.30 (ii) 9.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.23 0.12  
 \*TOTALS\*  
 PEAK FLOW (cms)= 4.43 1.02 5.445 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 47.46 78.76  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.47 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0139): 202.56 7.831 3.00 56.03  
 + ID2= 2 ( 6052): 15.90 5.445 3.00 78.76  
 ID = 3 ( 0132): 218.46 13.276 3.00 57.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 / 0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel->

AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0132) 218.46 13.28 3.00 57.68 0.93 0.78



OUTFLOW: ID= 1 ( 0530) 218.46 10.46 3.08 57.68 0.84 0.75

RUNOFF VOLUME (mm)= 95.62 46.34 73.94  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.64 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 5302) Area (ha)= 5.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.83 1.97  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

ADD HYD ( 0134)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0530): 218.46 10.458 3.08 57.68  
 + ID2= 2 ( 5302): 5.80 1.761 3.00 73.94  
 ID = 3 ( 0134): 224.26 11.472 3.00 58.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0120): 273.94 20.102 3.00 61.43  
 + ID2= 2 ( 0134): 224.26 11.472 3.00 58.10  
 ID = 3 ( 0135): 498.20 31.574 3.00 59.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0507)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION ( 40.0) -----

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900

Max.Eff.Inten.(mm/hr)= 159.59 119.48  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 3.18 (ii) 11.27 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.09  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.42 0.40 1.761 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00

47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700 Main Channel
85.82	76.28	0.0700 Main Channel
89.97	76.89	0.0700 Main Channel
91.35	77.38	0.0700 / 0.0900 Main Channel
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

<--- hydrograph ---> <-pipe / channel->  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
 INFLOW : ID= 2 ( 0135) 498.20 31.57 3.00 59.93 2.59 1.02  
 OUTFLOW: ID= 1 ( 0507) 498.20 25.55 3.17 59.93 2.37 0.97

CALIB  
 STANDHYD ( 5072) Area (ha)= 48.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 24.45 24.45  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 570.96 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 139.84  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 6.03 (ii) 13.63 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.19 0.08  
 \*TOTALS\*  
 PEAK FLOW (cms)= 7.24 5.52 11.930 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 55.09 69.68  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.54 0.69









```

27.83 0.20 | 59.08 0.52 | 90.33 0.45 | 121.58 0.17 | 152.83 0.11
27.92 0.20 | 59.17 0.51 | 90.42 0.44 | 121.67 0.17 | 152.92 0.11
28.00 0.19 | 59.25 0.51 | 90.50 0.44 | 121.75 0.17 | 153.00 0.11
28.08 0.19 | 59.33 0.50 | 90.58 0.44 | 121.83 0.17 | 153.08 0.11
28.17 0.19 | 59.42 0.50 | 90.67 0.43 | 121.92 0.17 | 153.17 0.11
28.25 0.19 | 59.50 0.49 | 90.75 0.43 | 122.00 0.17 | 153.25 0.11
28.33 0.19 | 59.58 0.49 | 90.83 0.43 | 122.08 0.17 | 153.33 0.11
28.42 0.19 | 59.67 0.49 | 90.92 0.43 | 122.17 0.17 | 153.42 0.11
28.50 0.19 | 59.75 0.48 | 91.00 0.42 | 122.25 0.18 | 153.50 0.11
28.58 0.18 | 59.83 0.48 | 91.08 0.42 | 122.33 0.18 | 153.58 0.11
28.67 0.18 | 59.92 0.47 | 91.17 0.42 | 122.42 0.18 | 153.67 0.11
28.75 0.18 | 60.00 0.47 | 91.25 0.42 | 122.50 0.18 | 153.75 0.11
28.83 0.18 | 60.08 0.47 | 91.33 0.41 | 122.58 0.18 | 153.83 0.11
28.92 0.18 | 60.17 0.46 | 91.42 0.41 | 122.67 0.18 | 153.92 0.11
29.00 0.18 | 60.25 0.46 | 91.50 0.41 | 122.75 0.18 | 154.00 0.11
29.08 0.18 | 60.33 0.45 | 91.58 0.41 | 122.83 0.18 | 154.08 0.11
29.17 0.18 | 60.42 0.45 | 91.67 0.41 | 122.92 0.18 | 154.17 0.11
29.25 0.17 | 60.50 0.44 | 91.75 0.41 | 123.00 0.18 | 154.25 0.11
29.33 0.17 | 60.58 0.44 | 91.83 0.40 | 123.08 0.18 | 154.33 0.11
29.42 0.17 | 60.67 0.44 | 91.92 0.40 | 123.17 0.18 | 154.42 0.11
29.50 0.17 | 60.75 0.43 | 92.00 0.40 | 123.25 0.18 | 154.50 0.11
29.58 0.17 | 60.83 0.43 | 92.08 0.40 | 123.33 0.18 | 154.58 0.11
29.67 0.17 | 60.92 0.42 | 92.17 0.40 | 123.42 0.18 | 154.67 0.11
29.75 0.17 | 61.00 0.42 | 92.25 0.39 | 123.50 0.18 | 154.75 0.11
29.83 0.17 | 61.08 0.42 | 92.33 0.39 | 123.58 0.18 | 154.83 0.11
29.92 0.16 | 61.17 0.42 | 92.42 0.39 | 123.67 0.18 | 154.92 0.11
30.00 0.16 | 61.25 0.41 | 92.50 0.39 | 123.75 0.18 | 155.00 0.11
30.08 0.16 | 61.33 0.41 | 92.58 0.38 | 123.83 0.18 | 155.08 0.11
30.17 0.16 | 61.42 0.40 | 92.67 0.38 | 123.92 0.18 | 155.17 0.11
30.25 0.16 | 61.50 0.40 | 92.75 0.38 | 124.00 0.18 | 155.25 0.11
30.33 0.16 | 61.58 0.40 | 92.83 0.38 | 124.08 0.18 | 155.33 0.11
30.42 0.16 | 61.67 0.40 | 92.92 0.38 | 124.17 0.18 | 155.42 0.11
30.50 0.16 | 61.75 0.39 | 93.00 0.37 | 124.25 0.18 | 155.50 0.11
30.58 0.16 | 61.83 0.39 | 93.08 0.37 | 124.33 0.19 | 155.58 0.11
30.67 0.16 | 61.92 0.39 | 93.17 0.37 | 124.42 0.19 | 155.67 0.11
30.75 0.16 | 62.00 0.38 | 93.25 0.37 | 124.50 0.19 | 155.75 0.11
30.83 0.15 | 62.08 0.38 | 93.33 0.37 | 124.58 0.19 | 155.83 0.10
30.92 0.15 | 62.17 0.38 | 93.42 0.37 | 124.67 0.20 | 155.92 0.11
31.00 0.15 | 62.25 0.38 | 93.50 0.37 | 124.75 0.20 | 156.00 0.10
31.08 0.15 | 62.33 0.39 | 93.58 0.37 | 124.83 0.20 |
31.17 0.15 | 62.42 0.39 | 93.67 0.37 | 124.92 0.20 |

```

```

V V I SSSSS U U A L (v 6.2.2018)
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
V V I SSSSS UUUU A A LLLL

```

```

0.50 4.06 | 2.00 8.11 | 3.50 6.76 | 5.00 2.70
0.67 4.06 | 2.17 8.11 | 3.67 6.76 | 5.17 2.70
0.83 4.06 | 2.33 8.11 | 3.83 6.76 | 5.33 2.70
1.00 4.06 | 2.50 40.56 | 4.00 5.41 | 5.50 2.70
1.17 4.06 | 2.67 73.01 | 4.17 5.41 | 5.67 2.70
1.33 4.06 | 2.83 105.46 | 4.33 5.41 | 5.83 2.70

```

```

CALIB
NASHYD ( 5011) Area (ha)= 80.20 Curve Number (CN)= 65.0
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.85

```

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 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06
0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

```

```

Unit Hyd Qpeak (cms)= 3.621
PEAK FLOW (cms)= 1.741 (i)
TIME TO PEAK (hrs)= 3.917
RUNOFF VOLUME (mm)= 18.089
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.268

```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000
Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.

```

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voain.dat
Output filename:
C:\Users\jannaormond\AppData\Local\Civica\HVS\860df144-956f-4cfc-88fc-f31f1a71e94a\
303bd5a6-54f3-459b-b9c6-c9745aab87f8\
Summary filename:
C:\Users\jannaormond\AppData\Local\Civica\HVS\860df144-956f-4cfc-88fc-f31f1a71e94a\
303bd5a6-54f3-459b-b9c6-c9745aab87f8\

```

DATE: 04-10-2024 TIME: 01:42:31

USER:

COMMENTS:

```

READ STORM Filename: C:\Users\jannaormond\AppData\Local\Temp\
fc287717-ea81-4509-917c-0fddd7b9a7f0\62f6350e
Ptotal= 67.60 mm Comments: Mount Hope-6 hour SCS Distribution Desig

```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.70	1.50	6.76	3.00	14.87	4.50	4.06
0.17	2.70	1.67	6.76	3.17	14.87	4.67	4.06
0.33	2.70	1.83	6.76	3.33	14.87	4.83	4.06

```

CALIB
STANDHYD ( 5012) Area (ha)= 37.32
ID= 1 DT= 5.0 min Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.18	23.14
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	498.80	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

--- TRANSFORMED HYETOGRAPH ---
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06
0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

```

```

Max.Eff.Inten.(mm/hr)= 105.46 44.47
over (min) = 5.00 20.00
Storage Coeff. (min)= 6.56 (ii) 18.58 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.18 0.06

```

```

PEAK FLOW (cms)= 2.40 1.55 3.431 (iii)
TIME TO PEAK (hrs)= 3.00 3.25 3.00
RUNOFF VOLUME (mm)= 61.60 21.60 31.20
TOTAL RAINFALL (mm)= 67.60 67.60 67.60
RUNOFF COEFFICIENT = 0.91 0.32 0.46

```



Max.Eff.Inten.(mm/hr)= 105.46 52.93  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.61 (ii) 13.82 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

PEAK FLOW (cms)= 0.25 0.08  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 61.60 30.54 46.25  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.45 0.68

\*TOTALS\*  
0.322 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5082)  
ID= 1 DT= 5.0 min

Area (ha)= 0.71  
Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.52 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 68.80 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70

1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.43  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.00 (ii) 13.61 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.13 0.02 0.147 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 21.69 47.22  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.32 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 5682)  
ID= 1 DT= 5.0 min

Area (ha)= 0.53  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 59.44 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06

0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06  
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06  
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06  
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70  
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70  
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70  
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 29.81  
over (min) 5.00 20.00  
Storage Coeff. (min)= 1.83 (ii) 15.93 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.32 0.07

PEAK FLOW (cms)= 0.10 0.01 0.107 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 17.82 46.26  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.26 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0501)  
ID= 1 DT= 5.0 min

Area (ha)= 6.23  
Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 2.62 3.61  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 203.80 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 20.98  
over (min) 5.00 25.00  
Storage Coeff. (min)= 3.83 (ii) 20.06 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.25 0.05

PEAK FLOW (cms)= 0.75 0.12 0.811 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 61.60 14.77 34.44  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.22 0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 0510)  
ID= 1 DT= 5.0 min

Area (ha)= 0.76  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00



IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.59 0.17  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 71.18 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 52.93  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.04 (ii) 13.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.17 0.02 0.187 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 30.54 54.76  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.45 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5752) Area (ha)= 0.78  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.51 0.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 72.11 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 44.30  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.06 (ii) 14.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.15 0.02 0.166 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.86 49.08  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60

RUNOFF COEFFICIENT = 0.91 0.38 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Storage Coeff. (min)= 2.76 (ii) 13.92 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.39 0.07 0.451 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 30.86 50.84  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.46 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 5282) Area (ha)= 2.08  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 53.51  
 over (min) = 5.00 15.00

ADD HYD ( 0481)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0501):	6.23	0.811	3.00	34.44
+ ID2= 2 ( 5021):	3.67	0.147	3.33	20.35
-----	-----	-----	-----	-----
ID = 3 ( 0481):	9.90	0.887	3.00	29.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	9.90	0.887	3.00	29.21
+ ID2= 2 ( 5082):	0.71	0.147	3.00	47.22
-----	-----	-----	-----	-----
ID = 1 ( 0481):	10.61	1.033	3.00	30.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	10.61	1.033	3.00	30.42
+ ID2= 2 ( 5092):	1.73	0.322	3.00	46.25

=====
ID = 3 ( 0481): 12.34 1.356 3.00 32.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0481): 12.34 1.356 3.00 32.64
+ ID2= 2 ( 0510): 0.76 0.187 3.00 54.76
ID = 1 ( 0481): 13.10 1.542 3.00 33.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0481): 13.10 1.542 3.00 33.92
+ ID2= 2 ( 5282): 2.08 0.451 3.00 50.84
ID = 3 ( 0481): 15.18 1.993 3.00 36.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0481): 15.18 1.993 3.00 36.24
+ ID2= 2 ( 5682): 0.53 0.107 3.00 46.26
ID = 1 ( 0481): 15.71 2.100 3.00 36.58

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0481): 15.71 2.100 3.00 36.58
+ ID2= 2 ( 5691): 2.30 0.245 3.00 18.97
ID = 3 ( 0481): 18.01 2.345 3.00 34.33

RUNOFF VOLUME (mm)= 29.420
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.435

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB
NASHYD ( 0522) Area (ha)= 3.31 Curve Number (CN)= 63.1
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.16

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show transformed hyetograph data points.

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.207 (i)
TIME TO PEAK (hrs)= 3.000
RUNOFF VOLUME (mm)= 16.970
TOTAL RAINFALL (mm)= 67.600
RUNOFF COEFFICIENT = 0.251

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)
3 + 2 = 1
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 3 ( 0481): 18.01 2.345 3.00 34.33
+ ID2= 2 ( 5752): 0.78 0.166 3.00 49.08
ID = 1 ( 0481): 18.79 2.511 3.00 34.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
NASHYD ( 0524) Area (ha)= 7.22 Curve Number (CN)= 80.7
ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
U.H. Tp(hrs)= 0.20

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show transformed hyetograph data points.

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 0.738 (i)
TIME TO PEAK (hrs)= 3.083

CALIB
STANDHYD ( 0580) Area (ha)= 1.87
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 1.22 0.65
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 111.65 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show transformed hyetograph data points.

Max. Eff. Inten. (mm/hr)= 105.46 29.81 over (min)= 5.00 20.00
Storage Coeff. (min)= 2.67 (ii) 16.77 (iii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.29 0.06

PEAK FLOW (cms)= 0.35 0.03 0.373 (iii)
TIME TO PEAK (hrs)= 3.00 3.25 3.00
RUNOFF VOLUME (mm)= 61.60 17.82 46.27
TOTAL RAINFALL (mm)= 67.60 67.60 67.60
RUNOFF COEFFICIENT = 0.91 0.26 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

PEAK FLOW (cms)= 0.39 0.03 0.413 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 46.00  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0519) Area (ha)= 2.08  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

CALIB  
 STANDHYD ( 0529) Area (ha)= 1.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.76 (ii) 17.13 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.64 (ii) 17.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.29 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.41 0.02 0.420 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 51.79  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.77

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0267):	5.75	1.206	3.00	47.90
+ ID2= 2 ( 0522):	3.31	0.207	3.00	16.97
ID = 3 ( 0265):	9.06	1.413	3.00	36.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0523) Area (ha)= 6.61  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0267)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0519):	2.08	0.413	3.00	46.00
+ ID2= 2 ( 0529):	1.80	0.420	3.00	51.79
ID = 3 ( 0267):	3.88	0.833	3.00	48.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0267)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0267):	3.88	0.833	3.00	48.69
+ ID2= 2 ( 0580):	1.87	0.373	3.00	46.27
ID = 1 ( 0267):	5.75	1.206	3.00	47.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0265)

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 115.46  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.90 (ii) 12.11 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.25 0.09

PEAK FLOW (cms)= 0.94 0.32

TIME TO PEAK (hrs)= 3.00 3.08

RUNOFF VOLUME (mm)= 61.60 29.30

TOTAL RAINFALL (mm)= 67.60 67.60

RUNOFF COEFFICIENT = 0.91 0.43

\*TOTALS\*

1.209 (iii)

3.00

45.45

67.60

0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0260)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0265):	9.06	1.413	3.00	36.60
+ ID2= 2 ( 0523):	6.61	1.209	3.00	45.45
ID = 3 ( 0260):	15.67	2.622	3.00	40.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0525)  
ID= 1 DT= 5.0 min

Area (ha)= 1.45  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.94 0.51

Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00

Length (m)= 98.32 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06

0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06

0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06

0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06

0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70

0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70

0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70

0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70

0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70

1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70

1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70

1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70

1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70

1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70

1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 43.62

over (min) = 5.00 15.00

Storage Coeff. (min)= 2.48 (ii) 14.58 (ii)

Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.29 0.08

PEAK FLOW (cms)= 0.27 0.04 0.306 (iii)

TIME TO PEAK (hrs)= 3.00 3.17 3.00

RUNOFF VOLUME (mm)= 61.60 25.49 48.95

TOTAL RAINFALL (mm)= 67.60 67.60 67.60

RUNOFF COEFFICIENT = 0.91 0.38 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0272)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0260):	15.67	2.622	3.00	40.33
+ ID2= 2 ( 0525):	1.45	0.306	3.00	48.95
ID = 3 ( 0272):	17.12	2.928	3.00	41.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0264)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0272):	17.12	2.928	3.00	41.06
+ ID2= 2 ( 0524):	7.22	0.738	3.08	29.42
ID = 3 ( 0264):	24.34	3.602	3.00	37.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0527)  
ID= 1 DT= 5.0 min

Area (ha)= 1.68  
Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.28 0.40

Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00

Length (m)= 105.83 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 162.12

over (min) = 5.00 10.00

Storage Coeff. (min)= 2.59 (ii) 9.75 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.29 0.11

PEAK FLOW (cms)= 0.25 0.13 0.383 (iii)

TIME TO PEAK (hrs)= 3.00 3.00 3.00

RUNOFF VOLUME (mm)= 61.60 41.71 52.05

TOTAL RAINFALL (mm)= 67.60 67.60 67.60

RUNOFF COEFFICIENT = 0.91 0.62 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0270)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0264):	24.34	3.602	3.00	37.61
+ ID2= 2 ( 0527):	1.68	0.383	3.00	52.05
ID = 3 ( 0270):	26.02	3.985	3.00	38.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5202)  
ID= 1 DT= 5.0 min

Area (ha)= 2.27  
Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.38 0.89

Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00

Length (m)= 123.02 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06

0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 46.97  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.83 (ii) 14.59 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.28 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.40 0.07 0.461 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 27.31 48.22  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.40 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0273)							
1 + 2 = 3							
		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		
ID1= 1 ( 0270):	26.02	3.985	3.00	38.54			
+ ID2= 2 ( 5202):	2.27	0.461	3.00	48.22			
-----							
ID = 3 ( 0273):	28.29	4.446	3.00	39.32			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 47.15  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.17 (ii) 13.91 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.21 0.02 0.228 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 27.41 54.07  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.41 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0279)							
IN= 2---> OUT= 1							
DT= 5.0 min							
		OUTFLOW	STORAGE	OUTFLOW	STORAGE		
		(cms)	(ha.m.)	(cms)	(ha.m.)		
0.0000	0.0000			0.0476	0.0432		
0.0096	0.0220			0.0579	0.0480		
0.0206	0.0306			0.0671	0.0528		
0.0297	0.0360			0.0000	0.0000		
-----							
		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		
INFLOW : ID= 2 ( 0526)	0.940	0.228	3.00	54.07			
OUTFLOW: ID= 1 ( 0279)	0.940	0.027	3.58	53.45			

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.80  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0345

| CALIB |

RESERVOIR( 0274)							
IN= 2---> OUT= 1							
DT= 5.0 min							
		OUTFLOW	STORAGE	OUTFLOW	STORAGE		
		(cms)	(ha.m.)	(cms)	(ha.m.)		
0.0000	0.0000			0.1400	0.8343		
0.0195	0.2416			0.2360	1.0014		
0.0700	0.5564			0.3420	1.6616		
-----							
		AREA	QPEAK	TPEAK	R.V.		
		(ha)	(cms)	(hrs)	(mm)		
INFLOW : ID= 2 ( 0273)	28.290	4.446	3.00	39.32			
OUTFLOW: ID= 1 ( 0274)	28.290	0.192	5.25	39.12			

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.32  
TIME SHIFT OF PEAK FLOW (min)=135.00  
MAXIMUM STORAGE USED (ha.m.)= 0.9251

CALIB			
STANDHYD ( 0526)			
ID= 1 DT= 5.0 min			
	Area (ha)=	0.94	
	Total Imp(%)=	78.00	Dir. Conn.(%)= 78.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.73	0.21
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	79.16	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70

STANDHYD ( 0574)			
ID= 1 DT= 5.0 min			
	Area (ha)=	1.44	
	Total Imp(%)=	78.00	Dir. Conn.(%)= 78.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.12	0.32
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	97.98	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 37.49  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.47 (ii) 15.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.33 0.02 0.340 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 22.11 52.91  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.33 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 71.5 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

RESERVOIR ( 0276 )		OVERFLOW IS OFF	
IN= 2--> OUT= 1	DT= 5.0 min		
		OUTFLOW (cms)	STORAGE (ha.m.)
		0.0000	0.0000
		0.0150	0.0327
		0.0310	0.0455
		0.0450	0.0536

		OUTFLOW (cms)	STORAGE (ha.m.)	R.V. (mm)
		0.0730	0.0642	
		0.0890	0.0712	
		0.1030	0.0784	
		0.0000	0.0000	

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0574)	1.440	0.340	3.00	52.91
OUTFLOW : ID= 1 ( 0276)	1.440	0.041	3.58	52.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.02  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0513

ADD HYD ( 0275 )		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3					
ID1= 1 ( 0276):		1.44	0.041	3.58	52.53
+ ID2= 2 ( 0279):		0.94	0.027	3.58	53.45
=====					
ID = 3 ( 0275):		2.38	0.068	3.58	52.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 0571 )		Area (ha)	Dir. Conn.(%)
ID= 1 DT= 5.0 min			
		19.59	50.00

	IMPERVIOUS (%)	PERVIOUS (i)
Surface Area (ha)=	13.32	6.27
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	361.39	40.00
Mannings n =	0.013	0.250

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 over (min)= 5.00  
Storage Coeff. (min)= 5.41 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.21 0.07

PEAK FLOW (cms)= 2.71 0.69 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 25.10 43.35  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.37 0.64

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.6 Ia = Dep. 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 ( 0572 )		Area (ha)	Dir. Conn.(%)
ID= 1 DT= 5.0 min			
		11.31	50.00

	IMPERVIOUS (%)	PERVIOUS (i)
Surface Area (ha)=	8.03	3.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	274.59	40.00
Mannings n =	0.013	0.250

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0282 )		AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3					
ID1= 1 ( 0571):		19.59	3.187	3.00	43.35
+ ID2= 2 ( 0572):		11.31	2.164	3.00	48.92
=====					
ID = 3 ( 0282):		30.90	5.352	3.00	45.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 0573 )		Area (ha)	Dir. Conn.(%)
ID= 1 DT= 5.0 min			
		2.66	60.00

	IMPERVIOUS (%)	PERVIOUS (i)
Surface Area (ha)=	1.60	1.06
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	133.17	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 over (min)= 5.00  
Storage Coeff. (min)= 4.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 1.59 0.67 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 2.164 (iii)  
RUNOFF VOLUME (mm)= 61.60 36.25 48.92  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.54 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

--- TRANSFORMED HYETOGRAPH ---							
TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 41.76
over (min) 5.00 20.00
Storage Coeff. (min)= 2.97 (ii) 15.29 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.28 0.07
\*TOTALS\*
PEAK FLOW (cms)= 0.46 0.07 0.512 (iii)
TIME TO PEAK (hrs)= 3.00 3.17 3.00
RUNOFF VOLUME (mm)= 61.60 24.46 46.74
TOTAL RAINFALL (mm)= 67.60 67.60 67.60
RUNOFF COEFFICIENT = 0.91 0.36 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 74.8 Ia = Dep. 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 ( 0285)
1 + 2 = 3
ID1= 1 ( 0282): 30.90 5.352 3.00 45.39
+ ID2= 2 ( 0573): 2.66 0.512 3.00 46.74
ID = 3 ( 0285): 33.56 5.863 3.00 45.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0280) OVERFLOW IS OFF
IN= 2----> OUT= 1
DT= 5.0 min
OUTFLOW STORAGE | OUTFLOW STORAGE
(cms) (ha.m.) | (cms) (ha.m.)
0.0000 0.0000 | 0.2300 1.1312
0.0230 0.3704 | 0.2810 1.3850
0.0900 0.8066 | 0.4120 2.2335

AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 0285) 33.560 5.863 3.00 45.50
OUTFLOW: ID= 1 ( 0280) 33.560 0.257 5.17 44.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.38

TIME SHIFT OF PEAK FLOW (min)=130.00
MAXIMUM STORAGE USED (ha.m.)= 1.2644

ADD HYD ( 0102)
1 + 2 = 3
ID1= 1 ( 0274): 28.29 0.192 5.25 39.12
+ ID2= 2 ( 0275): 2.38 0.068 3.58 52.89
ID = 3 ( 0102): 30.67 0.240 5.00 40.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)
3 + 2 = 1
ID1= 3 ( 0102): 30.67 0.240 5.00 40.19
+ ID2= 2 ( 0280): 33.56 0.257 5.17 44.87
ID = 1 ( 0102): 64.23 0.496 5.08 42.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)
1 + 2 = 3
ID1= 1 ( 0102): 64.23 0.496 5.08 42.64
+ ID2= 2 ( 0481): 18.79 2.511 3.00 34.94
ID = 3 ( 0102): 83.02 2.676 3.00 40.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)
3 + 2 = 1
ID1= 3 ( 0102): 83.02 2.676 3.00 40.89
+ ID2= 2 ( 0502): 117.52 2.740 3.58 22.25
ID = 1 ( 0102): 200.54 4.231 3.00 29.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)
IN= 2----> OUT= 1
Routing time step (min)= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance Elevation Manning
0.00 86.78 0.0900
25.34 87.17 0.0900
68.44 87.04 0.0900
117.13 86.81 0.0900
125.36 85.21 0.0900 / 0.0700 Main Channel
127.36 84.21 0.0700 Main Channel
128.86 84.21 0.0700 Main Channel
130.86 85.21 0.0700 / 0.0900 Main Channel
131.88 86.36 0.0900
140.63 86.77 0.0900
168.26 86.90 0.0900
169.81 87.10 0.0900
202.11 87.50 0.0900
239.06 87.35 0.0900
270.29 87.83 0.0900
283.90 87.90 0.0900
297.51 87.86 0.0900
324.73 87.89 0.0900
351.95 87.78 0.0900
388.59 87.46 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.17 84.38 .114E+03 0.1 0.34 18.34
0.33 84.54 .269E+03 0.4 0.50 12.51
0.50 84.71 .465E+03 0.8 0.62 10.07
0.67 84.88 .703E+03 1.4 0.72 8.63
0.83 85.04 .982E+03 2.1 0.81 7.65
1.00 85.21 .130E+04 3.1 0.89 6.93
1.21 85.42 .177E+04 5.0 1.06 5.87
1.41 85.62 .234E+04 7.4 1.17 5.28
1.62 85.83 .300E+04 10.2 1.27 4.89
1.83 86.04 .376E+04 13.6 1.35 4.60
2.03 86.24 .462E+04 17.6 1.42 4.37
2.24 86.45 .560E+04 22.1 1.47 4.22
2.45 86.66 .695E+04 27.6 1.48 4.20
2.66 86.87 .925E+04 31.2 1.25 4.94
2.86 87.07 .168E+05 43.1 0.96 6.48
3.07 87.28 .297E+05 67.7 0.85 7.30
3.28 87.49 .456E+05 103.1 0.84 7.38
3.48 87.69 .663E+05 159.6 0.89 6.93

3.69 87.90 .907E+05 223.4 0.92 6.77

hydrograph <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0102) 200.54 4.23 3.00 29.97 1.12 0.98
OUTFLOW: ID= 1 ( 0503) 200.54 3.75 3.50 29.97 1.07 0.94

CALIB
STANDHYD ( 5032) Area (ha)= 13.80
ID= 1 DT= 5.0 min Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 10.49 3.31
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 303.32 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 2.70 1.583 6.76 3.083 14.87 4.58 4.06
0.167 2.70 1.667 6.76 3.167 14.87 4.67 4.06
0.250 2.70 1.750 6.76 3.250 14.87 4.75 4.06
0.333 2.70 1.833 6.76 3.333 14.87 4.83 4.06
0.417 2.70 1.917 6.76 3.417 14.87 4.92 4.06
0.500 2.70 2.000 6.76 3.500 14.87 5.00 4.06
0.583 4.06 2.083 8.11 3.583 6.76 5.08 2.70
0.667 4.06 2.167 8.11 3.667 6.76 5.17 2.70
0.750 4.06 2.250 8.11 3.750 6.76 5.25 2.70
0.833 4.06 2.333 8.11 3.833 6.76 5.33 2.70
0.917 4.06 2.417 8.11 3.917 6.76 5.42 2.70
1.000 4.06 2.500 8.11 4.000 6.76 5.50 2.70
1.083 4.06 2.583 40.56 4.083 5.41 5.58 2.70
1.167 4.06 2.667 40.56 4.167 5.41 5.67 2.70
1.250 4.06 2.750 73.01 4.250 5.41 5.75 2.70
1.333 4.06 2.833 73.01 4.333 5.41 5.83 2.70
1.417 4.06 2.917 105.46 4.417 5.41 5.92 2.70
1.500 4.06 3.000 105.46 4.500 5.41 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 76.59
over (min) 5.00 15.00

Storage Coeff. (min)= 4.87 (ii) 14.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 2.59 0.38  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 61.60 27.81  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.41

\*TOTALS\*

2.901 (iii)  
 3.00  
 50.45  
 67.60  
 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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)
ID1= 1 ( 0503):	200.54	3.752	3.50	29.97
+ ID2= 2 ( 5032):	13.80	2.901	3.00	50.45
ID = 3 ( 0104):	214.34	6.272	3.00	31.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	

Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 72.79  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.09 (ii) 13.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 1.42 0.21  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 61.60 26.01  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.38

\*TOTALS\*

1.600 (iii)  
 3.00  
 49.14  
 67.60  
 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

461.15 83.40 0.0900  
 501.83 83.53 0.0900  
 513.93 82.96 0.0900  
 526.85 83.23 0.0900  
 569.63 83.21 0.0900  
 610.76 83.63 0.0900  
 663.54 83.88 0.0900

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	214.34	6.27	31.29	0.77	0.33
OUTFLOW: ID= 1 ( 0504)	214.34	4.42	31.28	0.71	0.32

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 5042)	7.70	75.00	65.00
ID= 1 DT= 5.0 min			

Surface Area (ha)	Dep. Storage (mm)	Average Slope (%)	Length (m)	IMPERVIOUS	PERVIOUS (i)
5.77	6.00	1.00	226.57	1.92	8.00
				1.00	40.00

ADD HYD ( 0106)  
 1 + 2 = 3 | AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0504): 214.34 4.416 3.17 31.28  
 + ID2= 2 ( 5042): 7.70 1.600 3.00 49.14  
 ID = 3 ( 0106): 222.04 5.227 3.00 31.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 5212)	15.70	75.00	66.00
ID= 1 DT= 5.0 min			

Surface Area (ha)	Dep. Storage (mm)	Average Slope (%)	Length (m)	Mannings n	IMPERVIOUS	PERVIOUS (i)
11.78	6.00	1.00	323.52		3.93	8.00
					0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 88.37  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 5.06 (ii) 14.19 (ii)



Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.08

PEAK FLOW (cms)= 2.89 0.54 3.333 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 32.42 51.68  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.48 0.76

\*TOTALS\*

394.77 81.68 0.0900  
 431.64 81.44 0.0900  
 477.44 82.08 0.0900  
 481.25 82.81 0.0900  
 501.51 83.16 0.0900

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

ADD HYD ( 0114)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0106):	222.04	5.227	3.00	31.90
+ ID2= 2 ( 5212):	15.70	3.333	3.00	51.68
ID = 3 ( 0114):	237.74	8.561	3.00	33.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0114) 237.74 8.56 3.00 33.21 0.67 0.50  
 OUTFLOW: ID= 1 ( 0505) 237.74 7.58 3.08 33.21 0.63 0.48

CALIB STANDHYD ( 5052)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 15.90  
 Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 11.77 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 57.40  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.08 (ii) 15.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.07

\*TOTALS\*

PEAK FLOW (cms)= 2.88 0.39 3.143 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.27 48.88  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.37 0.72

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0108)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08

1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<---- hydrograph ---->						<-pipe / channel-->		
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL			
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)			
INFLOW: ID= 2 ( 0108)	253.64	10.37	3.00	34.19	1.58	1.16		
OUTFLOW: ID= 1 ( 0506)	253.64	9.53	3.08	34.19	1.54	1.20		

1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70
Max.Eff.Inten.(mm/hr)=	105.46	78.89					
over (min)	5.00	15.00					
Storage Coeff. (min)=	4.63 (ii)	14.18 (ii)					
Unit Hyd. Tpeak (min)=	5.00	15.00					
Unit Hyd. peak (cms)=	0.22	0.08					
*TOTALS*							
PEAK FLOW (cms)=	2.14	0.35					2.430 (iii)
TIME TO PEAK (hrs)=	3.00	3.08					3.00
RUNOFF VOLUME (mm)=	61.60	28.16					49.90
TOTAL RAINFALL (mm)=	67.60	67.60					67.60
RUNOFF COEFFICIENT =	0.91	0.42					0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0110)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0506):	253.64	9.525	3.08	34.19
+ ID2= 2 ( 5062):	11.70	2.430	3.00	49.90
=====				
ID = 3 ( 0110):	265.34	11.107	3.00	34.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)= 1.70	
STANDHYD ( 5102)		Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00	
ID= 1 DT= 5.0 min			
-----			
		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.09	0.61
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	106.46	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	53.29					
over (min)	5.00	15.00					
Storage Coeff. (min)=	2.60 (ii)	13.77 (ii)					
Unit Hyd. Tpeak (min)=	5.00	15.00					
Unit Hyd. peak (cms)=	0.29	0.08					
*TOTALS*							
PEAK FLOW (cms)=	0.26	0.06					0.306 (iii)
TIME TO PEAK (hrs)=	3.00	3.08					3.00
RUNOFF VOLUME (mm)=	61.60	23.76					43.43
TOTAL RAINFALL (mm)=	67.60	67.60					67.60
RUNOFF COEFFICIENT =	0.91	0.35					0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511)			
IN= 2--> OUT= 1			
Routing time step (min)= 5.00			
-----			
<----- DATA FOR SECTION ( 553.6) ----->			
Distance	Elevation	Manning	

0.00	81.24	0.1100			
33.01	80.98	0.1100			
49.97	81.27	0.1100			
54.18	80.35	0.1100			
60.88	81.23	0.1100 / 0.0700	Main Channel		
69.13	79.02	0.0700	Main Channel		
92.42	79.04	0.0700	Main Channel		
98.70	80.89	0.0700 / 0.1100	Main Channel		
128.88	81.13	0.1100			
199.00	81.23	0.1100			

<----- TRAVEL TIME TABLE ----->						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.12	79.13	.361E+03	0.6	0.24	9.91	
0.23	79.25	.776E+03	2.1	0.40	6.09	
0.35	79.37	.121E+04	4.3	0.52	4.65	
0.47	79.48	.165E+04	7.1	0.63	3.85	
0.59	79.60	.211E+04	10.5	0.72	3.34	
0.70	79.72	.258E+04	14.4	0.81	2.98	
0.82	79.84	.307E+04	18.8	0.89	2.71	
0.94	79.95	.357E+04	23.8	0.97	2.50	
1.05	80.07	.408E+04	29.2	1.04	2.33	
1.17	80.19	.461E+04	35.1	1.10	2.19	
1.29	80.30	.515E+04	41.5	1.17	2.07	
1.41	80.42	.571E+04	48.4	1.23	1.97	
1.52	80.54	.631E+04	55.8	1.28	1.88	
1.64	80.66	.695E+04	63.8	1.33	1.81	
1.76	80.77	.762E+04	72.3	1.38	1.76	
1.87	80.89	.833E+04	81.4	1.42	1.71	
2.00	81.02	.931E+04	92.4	1.44	1.68	
2.13	81.14	.109E+05	104.8	1.39	1.74	
2.25	81.27	.140E+05	120.9	1.25	1.93	

<---- hydrograph ---->						<-pipe / channel-->		
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL			
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)			
INFLOW: ID= 2 ( 5102)	1.70	0.31	3.00	43.43	0.06	0.24		
OUTFLOW: ID= 1 ( 0511)	1.70	0.22	3.00	43.42	0.04	0.24		

CALIB		Area (ha)= 3.00	
STANDHYD ( 5112)		Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00	
ID= 1 DT= 5.0 min			
-----			
		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	2.07	0.93

Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 141.42 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 74.74  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.08 (ii) 12.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.50 0.11 0.595 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.53 47.29  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.41 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0117) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0511):	1.70	0.222	3.00	43.42
+ ID2= 2 ( 5112):	3.00	0.595	3.00	47.29
-----				
ID = 3 ( 0117):	4.70	0.817	3.00	45.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0512) |  
 | IN= 2---> OUT= 1 |

Routing time step (min)= 5.00

----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900
41.13	82.12	0.0900 / 0.0700
46.88	79.71	0.0700
51.41	80.90	0.0700 / 0.0900
94.29	80.56	0.0900
175.64	80.72	0.0900
192.09	80.85	0.0900

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16

2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

----- hydrograph ----- <-pipe / channel->

INFLOW : ID= 2 ( 0117)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
4.70	0.82	3.00	45.89	0.75	0.45	
OUTFLOW: ID= 1 ( 0512)	4.70	0.50	3.08	45.83	0.63	0.40

over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.33 (ii) 13.15 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.64 0.15 0.761 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.37 46.88  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.40 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0119) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0512):	4.70	0.501	3.08	45.83
+ ID2= 2 ( 5122):	3.90	0.761	3.00	46.88
-----				
ID = 3 ( 0119):	8.60	1.226	3.00	46.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0120) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0110):	265.34	11.107	3.00	34.88
+ ID2= 2 ( 0119):	8.60	1.226	3.00	46.30
-----				
ID = 3 ( 0120):	273.94	12.334	3.00	35.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 6011) | Area (ha)= 44.10 Curve Number (CN)= 62.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 ----- U.H. Tp(hrs)= 0.83

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 73.73



- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

ADD HYD ( 0125)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0021):	43.60	0.789	4.00	16.50
+ ID2= 2 ( 0022):	12.90	1.157	3.00	28.99
ID = 3 ( 0125):	56.50	1.292	3.00	19.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0124):	55.10	1.120	3.50	18.36
+ ID2= 2 ( 0125):	56.50	1.292	3.00	19.35
ID = 3 ( 0126):	111.60	2.273	3.00	18.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

INFLOW : ID= 2 ( 0126)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
111.60	2.27	3.00	18.86	0.60	0.22	
OUTFLOW: ID= 1 ( 0603)	111.60	1.51	4.58	18.86	0.55	0.21

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 0613)	1.77	66.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.22	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.101 (i)  
TIME TO PEAK (hrs)= 3.083  
RUNOFF VOLUME (mm)= 18.628  
TOTAL RAINFALL (mm)= 67.600  
RUNOFF COEFFICIENT = 0.276

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6222)	2.02	78.00
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 1.58	0.44
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 116.05	40.00
Mannings n = 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
1.04	0.47	6.00	8.00	1.00	1.00		

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46  
over (min)= 5.00  
Storage Coeff. (min)= 2.73 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.29

PEAK FLOW (cms)= 0.46  
TIME TO PEAK (hrs)= 3.00  
RUNOFF VOLUME (mm)= 61.60  
TOTAL RAINFALL (mm)= 67.60  
RUNOFF COEFFICIENT = 0.91

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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)	Dir. Conn.(%)
STANDHYD ( 0614)	1.50	50.00
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 1.04	0.47
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00

Length (m) = 100.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 81.09  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.50 (ii) 11.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.22 0.06 0.270 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.32 43.46  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.37 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0615) Area (ha)= 2.14  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.67 0.47  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 119.44 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 35.47  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.78 (ii) 15.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.48 0.03 0.502 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 20.99 52.66  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.31 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

PEAK FLOW (cms)= 0.22 0.08 0.288 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 31.69 46.64  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.47 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0618) Area (ha)= 1.49  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.16 0.33  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 99.67 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 141.15  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.50 (ii) 10.07 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.10

\*TOTALS\*

CALIB  
 STANDHYD ( 6302) Area (ha)= 0.86  
 ID= 1 DT= 5.0 min Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.81 0.05  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.72 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.12 (ii) 4.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.31 0.22

PEAK FLOW (cms)= 0.24 0.00  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25

\*TOTALS\*  
 0.241 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0617)  
 ID= 1 DT= 5.0 min

Area (ha)= 2.31  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
 0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
 1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
 1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
 1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
 1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
 1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
 1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
 1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 161.84  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.85 (ii) 10.01 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.10

\*TOTALS\*  
 0.464 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0290)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0614):	1.50	0.270	3.00	43.46
+ ID2= 2 ( 0615):	2.14	0.502	3.00	52.66
-----				
ID = 3 ( 0290):	3.64	0.772	3.00	48.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)  
 3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	3.64	0.772	3.00	48.87
+ ID2= 2 ( 0617):	2.31	0.464	3.00	49.04

ID = 1 ( 0290): 5.95 1.237 3.00 48.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	5.95	1.237	3.00	48.93
+ ID2= 2 ( 0618):	1.49	0.288	3.00	46.64
-----				
ID = 3 ( 0290):	7.44	1.524	3.00	48.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)  
 3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	7.44	1.524	3.00	48.47
+ ID2= 2 ( 6222):	2.02	0.475	3.00	52.66
-----				
ID = 1 ( 0290):	9.46	1.999	3.00	49.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	9.46	1.999	3.00	49.37
+ ID2= 2 ( 6302):	0.86	0.241	3.00	58.92
-----				
ID = 3 ( 0290):	10.32	2.240	3.00	50.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6212)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.15  
 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.75 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

Length (m)= 87.56 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.31 (ii) 16.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

\*TOTALS\*  
 0.230 (iii)

PEAK FLOW (cms)= 0.22 0.02  
 TIME TO PEAK (hrs)= 3.00 3.25  
 RUNOFF VOLUME (mm)= 61.60 17.04  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6232) Area (ha)= 0.85  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.55 0.30  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.44  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.11 (ii) 16.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.31 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.16 0.01 0.170 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 17.04 45.99  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.25 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.04  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.19 (ii) 13.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.17 0.03 0.195 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 27.90 48.11  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.41 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0297)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0288):	2.00	0.400	3.00 45.99
+ ID2= 2 ( 0290):	10.32	2.240	3.00 50.16
ID = 3 ( 0297):	12.32	2.640	3.00 49.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)  
 3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0297):	12.32	2.640	3.00 49.49
+ ID2= 2 ( 0613):	1.77	0.101	3.08 18.63
ID = 1 ( 0297):	14.09	2.725	3.00 45.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0288)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6212):	1.15	0.230	3.00 45.99
+ ID2= 2 ( 6232):	0.85	0.170	3.00 45.99
ID = 3 ( 0288):	2.00	0.400	3.00 45.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0626) Area (ha)= 0.96  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.58 0.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 80.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70

ADD HYD ( 0297)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0297):	14.09	2.725	3.00 45.61
+ ID2= 2 ( 0626):	0.96	0.195	3.00 48.11
ID = 3 ( 0297):	15.05	2.921	3.00 45.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0302) OVERFLOW IS OFF  
 IN= 2--> OUT= 1  
 DT= 5.0 min

OUTFLOW	STORAGE	OUTFLOW	STORAGE
(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000	0.1070	0.3146
0.0150	0.1715	0.7100	0.8031

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0297)	15.050	2.921	3.00 45.77
OUTFLOW: ID= 1 ( 0302)	15.050	0.310	3.75 45.58

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.61  
 TIME SHIFT OF PEAK FLOW (min)= 45.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.4792

CALIB  
 STANDHYD ( 6202) Area (ha)= 1.26  
 ID= 1 DT= 5.0 min Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.18 0.08  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 91.65 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06



0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.37 (ii) 5.20 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.16

\*TOTALS\*  
PEAK FLOW (cms)= 0.35 0.01 0.351 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 61.60 17.04 58.92  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.87

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0292)					OVERFLOW IS OFF				
IN= 2--> OUT= 1									
DT= 5.0 min									
OUTFLOW (cms)		STORAGE (ha.m.)		OUTFLOW (cms)		STORAGE (ha.m.)			
0.0000		0.0000		0.0580		0.0848			
0.0090		0.0366		0.0000		0.0000			
AREA (ha)		QPEAK (cms)		TPEAK (hrs)		R.V. (mm)			
INFLOW : ID= 2 ( 6202)		1.260		0.351		3.00		58.92	

OUTFLOW: ID= 1 ( 0292) 1.260 0.027 3.58 58.11

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.82  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0548

CALIB		Area (ha)= 1.98	
STANDHYD ( 0606)		Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00	
ID= 1 DT= 5.0 min			

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.29	0.69	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	114.89	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 28.43  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.72 (ii) 17.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.37 0.03 0.394 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 61.60 17.04 46.00  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)= 2.18	
STANDHYD ( 0612)		Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00	
ID= 1 DT= 5.0 min			
IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	2.05	0.13	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	120.55	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)= 105.46 34.29  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.80 (ii) 5.63 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.28 0.15

\*TOTALS\*

PEAK FLOW (cms)= 0.59 0.01 0.605 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 61.60 17.04 58.93  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.25 0.87

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0295)				OVERFLOW IS OFF			
IN= 2--> OUT= 1							
DT= 5.0 min							
OUTFLOW (cms)		STORAGE (ha.m.)		OUTFLOW (cms)		STORAGE (ha.m.)	
0.0000		0.0000		0.1000		0.1464	
0.0159		0.0631		0.0000		0.0000	
AREA (ha)		QPEAK (cms)		TPEAK (hrs)		R.V. (mm)	
INFLOW : ID= 2 ( 0612)		2.180		0.605		3.00	
OUTFLOW: ID= 1 ( 0295)		2.180		0.048		3.58	

PEAK FLOW REDUCTION [Qout/Qin](%)= 7.89  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0946

ADD HYD ( 0306)			
1 + 2 = 3			
AREA (ha)		QPEAK (cms)	
ID1= 1 ( 0292):		1.26 0.027 3.58 58.11	
+ ID2= 2 ( 0295):		2.18 0.048 3.58 58.46	
ID = 3 ( 0306):		3.44 0.075 3.58 58.33	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0306)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0306):	3.44	0.075	3.58	58.33
+ ID2= 2 ( 0606):	1.98	0.394	3.00	46.00
=====				
ID = 1 ( 0306):	5.42	0.438	3.00	53.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0304)	Routing time step (min)=
IN= 2----> OUT= 1	5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08

1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70

Max.Eff.Inten.(mm/hr)=	105.46	48.04
over (min)	5.00	15.00
Storage Coeff. (min)=	1.73 (ii)	13.38 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08
*TOTALS*		
PEAK FLOW (cms)=	0.10	0.01
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	61.60	27.90
TOTAL RAINFALL (mm)=	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.41

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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)=	Dir. Conn.(%)=
STANDHYD ( 6102)	2.49	50.00
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.94	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	128.84	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70

1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

	Area (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0306)	5.42	0.44	3.00	53.83	0.21	0.67
OUTFLOW: ID= 1 ( 0304)	5.42	0.21	3.08	53.82	0.14	0.51

CALIB	Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 0616)	0.44	78.00
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.10
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70

Max.Eff.Inten.(mm/hr)=	105.46	192.38
over (min)	5.00	10.00
Storage Coeff. (min)=	2.91 (ii)	9.60 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.11
*TOTALS*		
PEAK FLOW (cms)=	0.36	0.21
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	61.60	44.05
TOTAL RAINFALL (mm)=	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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)=	Dir. Conn.(%)=
STANDHYD ( 0624)	0.89	78.00
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.69	0.20
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	77.03	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06

0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 48.04  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.14 (ii) 13.79 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.20 0.02 0.217 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 27.90 54.17  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.41 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0286)							
1 + 2 = 3							
		AREA	QPEAK	TPEAK		R.V.	
		(ha)	(cms)	(hrs)		(mm)	
ID1= 1 ( 6102):	2.49	0.572	3.00	52.82			
+ ID2= 2 ( 0616):	0.44	0.107	3.00	54.17			
=====							
ID = 3 ( 0286):	2.93	0.679	3.00	53.02			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0286):	2.93	0.679	3.00	53.02
+ ID2= 2 ( 0624):	0.89	0.217	3.00	54.17
=====				
ID = 1 ( 0286):	3.82	0.896	3.00	53.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0305)				
IN= 2---> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.1760	0.2330
	0.0280	0.0927	0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0286)	3.820	0.896	3.00	53.29
OUTFLOW: ID= 1 ( 0305)	3.820	0.083	3.75	53.07

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.21  
TIME SHIFT OF PEAK FLOW (min)= 45.00  
MAXIMUM STORAGE USED (ha.m.)= 0.1444

CALIB			
STANDHYD ( 0619)			
ID= 1 DT= 5.0 min			
Area (ha)=	1.64		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.07	0.57
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	104.56	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06

0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 55.30  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.57 (ii) 13.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.31 0.06 0.358 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 31.83 51.17  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.47 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0293)							
1 + 2 = 3							
		AREA	QPEAK	TPEAK		R.V.	
		(ha)	(cms)	(hrs)		(mm)	
ID1= 1 ( 0302):	15.05	0.310	3.75	45.58			
+ ID2= 2 ( 0304):	5.42	0.213	3.08	53.82			
=====							
ID = 3 ( 0293):	20.47	0.470	3.50	47.76			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0293):	20.47	0.470	3.50	47.76
+ ID2= 2 ( 0305):	3.82	0.083	3.75	53.07
=====				
ID = 1 ( 0293):	24.29	0.552	3.58	48.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0293):	24.29	0.552	3.58	48.59
+ ID2= 2 ( 0619):	1.64	0.358	3.00	51.17
=====				
ID = 3 ( 0293):	25.93	0.739	3.00	48.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 6032)			
ID= 1 DT= 5.0 min			
Area (ha)=	29.63		
Total Imp(%)=	47.00	Dir. Conn.(%)=	32.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	13.93	15.70
Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	444.45	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70

0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 59.29  
over (min) 5.00 20.00  
Storage Coeff. (min)= 6.12 (ii) 16.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.19 0.06

PEAK FLOW (cms)= 2.57 1.49 3.591 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 66.10 27.22 39.66  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.98 0.40 0.59

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0128)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0293):	25.93	0.739	3.00	48.76
+ ID2= 2 ( 0603):	111.60	1.507	4.58	18.86
ID = 3 ( 0128):	137.53	2.001	4.50	24.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)

3 + 2 = 1	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0128):	137.53	2.001	4.50	24.50

+ ID2= 2 ( 0032): 29.63 3.591 3.00 39.66  
=====

ID = 1 ( 0128): 167.16 4.740 3.00 27.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0604)

IN= 2---> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION (1414.9)

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

TRAVEL TIME TABLE

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	119.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02

2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 98.27  
over (min) 5.00 15.00  
Storage Coeff. (min)= 5.75 (ii) 14.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.20 0.08

PEAK FLOW (cms)= 4.54 0.80 5.210 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 34.91 53.33  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.52 0.79

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 6042) Area (ha)= 24.00  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 18.72 5.28  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 400.00 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70

ADD HYD ( 0130)

1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0604):	167.16	1.931	4.50	27.18
+ ID2= 2 ( 6042):	24.00	5.210	3.00	53.33
ID = 3 ( 0130):	191.16	6.677	3.00	30.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0605)

IN= 2---> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION ( 801.4)

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100

223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

Surface Area	(ha)=	8.21	3.19
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	275.68	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	83.50	
over (min)	5.00	15.00	
Storage Coeff. (min)	4.60 (ii)	13.93 (ii)	
Unit Hyd. Tpeak (min)	5.00	15.00	
Unit Hyd. peak (cms)	0.23	0.08	
PEAK FLOW (cms)	1.99	0.41	*TOTALS*
TIME TO PEAK (hrs)	3.00	3.08	2.33 (iii)
RUNOFF VOLUME (mm)	61.60	30.68	49.85
TOTAL RAINFALL (mm)	67.60	67.60	67.60
RUNOFF COEFFICIENT	0.91	0.45	0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

DEPTH	ELEV	VOLUME	TRAVEL	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	FLOW RATE	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0130)	191.16	6.68	3.00	30.46	1.06	0.36
OUTFLOW: ID= 1 ( 0605)	191.16	2.84	3.50	30.46	0.88	0.28

CALIB	
STANDHYD ( 6112)	Area (ha)= 11.40
ID= 1 DT= 5.0 min	Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00
IMPERVIOUS	PERVIOUS (i)

ADD HYD ( 0139)	
1 + 2 = 3	AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 0605):	191.16 2.840 3.50 30.46
+ ID2= 2 ( 6112):	11.40 2.333 3.00 49.85
ID = 3 ( 0139):	202.56 4.550 3.00 31.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	
STANDHYD ( 6052)	Area (ha)= 15.90
ID= 1 DT= 5.0 min	Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00
IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.77 4.13
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	325.58 40.00
Mannings n =	0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	54.20	
over (min)	5.00	20.00	
Storage Coeff. (min)	5.08 (ii)	16.18 (ii)	
Unit Hyd. Tpeak (min)	5.00	20.00	
Unit Hyd. peak (cms)	0.21	0.06	
PEAK FLOW (cms)	2.88	0.36	*TOTALS*
TIME TO PEAK (hrs)	3.00	3.17	3.124 (iii)
RUNOFF VOLUME (mm)	61.60	23.93	48.42
TOTAL RAINFALL (mm)	67.60	67.60	67.60
RUNOFF COEFFICIENT	0.91	0.35	0.72

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0139):	202.56 4.550 3.00 31.55
+ ID2= 2 ( 6052):	15.90 3.124 3.00 48.42
ID = 3 ( 0132):	218.46 7.674 3.00 32.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0530)	
IN= 2 ---> OUT= 1	Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 350.0) -----

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700

118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

Average Slope (%) = 1.00 1.00  
 Length (m) = 196.64 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

Max.Eff.Inten.(mm/hr)= 105.46 50.53  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 3.75 (ii) 15.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.25 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.93 0.17  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 61.60 23.21  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.34 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 -----

CALIB	STANDHYD ( 5302 )	ID= 1 DT= 5.0 min	Area (ha)= 5.80	Total Imp(%)= 66.00	Dir. Conn.(%)= 56.00
-------	-------------------	-------------------	-----------------	---------------------	----------------------

----- IMPERVIOUS PERVIOUS (i) -----

Surface Area (ha)=	3.83	1.97
Dep. Storage (mm)=	6.00	8.00

----- ADD HYD ( 0134 ) -----

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530 ):	218.46	5.988	3.00	32.78
+ ID2= 2 ( 5302 ):	5.80	1.043	3.00	44.71
=====				
ID = 3 ( 0134 ):	224.26	6.572	3.00	33.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ADD HYD ( 0135 ) -----

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120 ):	273.94	12.334	3.00	35.24
+ ID2= 2 ( 0134 ):	224.26	6.572	3.00	33.09
=====				
ID = 3 ( 0135 ):	498.20	18.905	3.00	34.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ROUTE CHN ( 0507 ) -----  
 IN= 2 ---> OUT= 1 | Routing time step (min)= 5.00

----- DATA FOR SECTION ( 40.0 ) -----

Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

----- hydrograph ----- <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0135 )	498.20	18.91	3.00	34.27	2.09	0.90
OUTFLOW: ID= 1 ( 0507 )	498.20	14.45	3.17	34.27	1.87	0.84

----- CALIB -----

CALIB	STANDHYD ( 5072 )	ID= 1 DT= 5.0 min	Area (ha)= 48.90	Total Imp(%)= 50.00	Dir. Conn.(%)= 36.00
-------	-------------------	-------------------	------------------	---------------------	----------------------

----- IMPERVIOUS PERVIOUS (i) -----

Surface Area (ha)=	24.45	24.45
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	570.96	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------







Table with 10 columns: TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW. Rows contain numerical data for various time and flow measurements.

Table with 10 columns: TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW. Rows contain numerical data for various time and flow measurements.

STORE HYD( 1605) AREA (ha)= 30.00
ID= 1 DT= 5.0min QPEAK (cms)= 1.37
TPEAK (hrs)= 71.92
VOLUME (mm)= 625.27

Table with 10 columns: TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW. Rows contain numerical data for various time and flow measurements.

Table with 10 columns: TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW. Rows contain numerical data for various time and flow measurements.





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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 73.75  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 6.08 (ii) 15.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.19 0.07

\*TOTALS\*

PEAK FLOW (cms)= 2.94 2.36 4.560 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 30.20 41.09  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.37 0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100 )  
 1 + 2 = 3

AREA OPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

---- hydrograph ----					<-pipe / channel->	
AREA	OPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0100 )	117.52	5.12	3.00	30.62	1.13	0.61
OUTFLOW: ID= 1 ( 0502 )	117.52	3.73	3.83	30.62	1.04	0.75

CALIB  
 NASHYD ( 5691 )  
 ID= 1 DT= 5.0 min

Area (ha)= 2.30 Curve Number (CN)= 69.3  
 Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.07

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.220  
 PEAK FLOW (cms)= 0.343 (i)

ID1= 1 ( 5011): 80.20 2.505 3.83 25.75  
 + ID2= 2 ( 5012): 37.32 4.560 3.00 41.09  
 =====  
 ID = 3 ( 0100): 117.52 5.124 3.00 30.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502 )  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.00
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49

TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 26.759  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.328

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 NASHYD ( 5021 )  
 ID= 1 DT= 5.0 min  
 Area (ha)= 3.67 Curve Number (CN)= 68.8  
 Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.43

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.328  
 PEAK FLOW (cms)= 0.211 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 28.731  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.352

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5092)  
ID= 1 DT= 5.0 min

Area (ha)= 1.73  
Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.88 0.85  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 107.39 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.88  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.42 (ii) 11.74 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.31 0.12 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.410 (iii)  
RUNOFF VOLUME (mm)= 75.60 41.57 58.79  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.51 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

PEAK FLOW (cms)= 0.16 0.03 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.182 (iii)  
RUNOFF VOLUME (mm)= 75.60 30.25 59.27  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.37 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 5682)  
ID= 1 DT= 5.0 min

Area (ha)= 0.53  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.34 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 59.44 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5082)  
ID= 1 DT= 5.0 min

Area (ha)= 0.71  
Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.52 0.19  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 68.80 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 80.00  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.85 (ii) 11.35 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 42.58  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 1.70 (ii) 13.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.12 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.17 0.133 (iii)  
RUNOFF VOLUME (mm)= 75.60 25.39 58.01  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.31 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0501)  
ID= 1 DT= 5.0 min

Area (ha)= 6.23  
Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 2.62 3.61  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 203.80 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26

0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 35.37  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.56 (ii) 16.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.06

PEAK FLOW (cms)= 0.91 0.20  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 75.60 21.28  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.26

\*TOTALS\*  
1.040 (iii)  
3.00  
44.09  
81.60  
0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 0510) Area (ha)= 0.76  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.59	0.17
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	71.18	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 72.24  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.91 (ii) 11.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.18 0.03  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 75.60 35.78  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.44

\*TOTALS\*  
0.206 (iii)  
3.00  
61.66  
81.60  
0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.6 Ia = Dep. 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

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 83.88  
over (min) 5.00 10.00  
Storage Coeff. (min)= 1.89 (ii) 6.65 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.14

PEAK FLOW (cms)= 0.21 0.03  
TIME TO PEAK (hrs)= 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 41.57  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.51

\*TOTALS\*  
0.240 (iii)  
3.00  
68.11  
81.60  
0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5752) Area (ha)= 0.78  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.51	0.27
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	72.11	40.00

STANDHYD ( 5282) Area (ha)= 2.08  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	1.35	0.73
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	117.76	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 84.64  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.56 (ii) 11.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.09

PEAK FLOW (cms)= 0.48 0.10  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 75.60 41.96  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.51

\*TOTALS\*  
0.563 (iii)  
3.00  
63.82  
81.60  
0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 82.1 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ID = 1 ( 0481): 13.10 1.985 3.00 43.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0501):	6.23	1.040	3.00	44.09
+ ID2= 2 ( 5021):	3.67	0.211	3.33	28.73
=====				
ID = 3 ( 0481):	9.90	1.154	3.00	38.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	9.90	1.154	3.00	38.40
+ ID2= 2 ( 5082):	0.71	0.182	3.00	59.27
=====				
ID = 1 ( 0481):	10.61	1.336	3.00	39.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	10.61	1.336	3.00	39.80
+ ID2= 2 ( 5092):	1.73	0.410	3.00	58.79
=====				
ID = 3 ( 0481):	12.34	1.746	3.00	42.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	12.34	1.746	3.00	42.46
+ ID2= 2 ( 0510):	0.76	0.240	3.00	68.11
=====				

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	13.10	1.985	3.00	43.95
+ ID2= 2 ( 5282):	2.08	0.563	3.00	63.82
=====				
ID = 3 ( 0481):	15.18	2.548	3.00	46.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	15.18	2.548	3.00	46.67
+ ID2= 2 ( 5682):	0.53	0.133	3.00	58.01
=====				
ID = 1 ( 0481):	15.71	2.681	3.00	47.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	15.71	2.681	3.00	47.05
+ ID2= 2 ( 5691):	2.30	0.343	3.00	26.76
=====				
ID = 3 ( 0481):	18.01	3.024	3.00	44.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	18.01	3.024	3.00	44.46
+ ID2= 2 ( 5752):	0.78	0.206	3.00	61.66
=====				
ID = 1 ( 0481):	18.79	3.230	3.00	45.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
NASHYD ( 0524)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)= 80.7
	7.22	8.00	# of Linear Res. (N)= 3.00
			U.H. Tp(hrs)= 0.20

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 1.012 (i)  
TIME TO PEAK (hrs)= 3.083  
RUNOFF VOLUME (mm)= 40.194  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.493

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
NASHYD ( 0522)			
ID= 1 DT= 5.0 min	Area (ha)	Ia (mm)	Curve Number (CN)= 63.1
	3.31	8.00	# of Linear Res. (N)= 3.00
			U.H. Tp(hrs)= 0.16

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.299 (i)  
TIME TO PEAK (hrs)= 3.000  
RUNOFF VOLUME (mm)= 24.249  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.297

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
STANDHYD ( 0580)			
ID= 1 DT= 5.0 min	Area (ha)	Total Imp(%)	Dir. Conn.(%)
	1.87	65.00	65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.22 0.65  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 111.65 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 42.58  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.48 (ii) 14.70 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.43 0.05 0.467 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 25.39 58.02  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.31 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
| CALIB |  
| STANDHYD ( 0519) | Area (ha)= 2.08  
| ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

-----  
| CALIB |  
| STANDHYD ( 0529) | Area (ha)= 1.80  
| ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.40 0.40  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 109.54 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 48.76  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.45 (ii) 7.21 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*

PEAK FLOW (cms)= 0.49 0.04 0.533 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 24.35 64.32  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.30 0.79

Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 40.75  
over (min) 5.00 20.00  
Storage Coeff. (min)= 2.56 (ii) 15.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.29 0.07

\*TOTALS\*

PEAK FLOW (cms)= 0.48 0.05 0.508 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 24.35 57.66  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.30 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0267) |  
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0519): 2.08 0.508 3.00 57.66  
+ ID2= 2 ( 0529): 1.80 0.533 3.00 64.32  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0267) |  
| 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0267): 3.88 1.041 3.00 60.75  
+ ID2= 2 ( 0580): 1.87 0.467 3.00 58.02  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0265) |  
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0267): 5.75 1.508 3.00 59.86  
+ ID2= 2 ( 0522): 3.31 0.299 3.00 24.25  
=====

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| CALIB |  
| STANDHYD ( 0523) | Area (ha)= 6.61  
| ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00



IMPERVIOUS      PERVIOUS (i)  
 Surface Area (ha)= 4.96      1.65  
 Dep. Storage (mm)= 6.00      8.00  
 Average Slope (%)= 1.00      1.00  
 Length (m)= 209.92      40.00  
 Mannings n = 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30      154.85  
                                  over (min)      5.00      15.00  
 Storage Coeff. (min)= 3.62 (ii)      10.91 (ii)  
 Unit Hyd. Tpeak (min)= 5.00      15.00  
 Unit Hyd. peak (cms)= 0.25      0.09  
  
 PEAK FLOW (cms)= 1.14      0.45      \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00      3.08      1.525 (iii)  
 RUNOFF VOLUME (mm)= 75.60      39.60      57.60  
 TOTAL RAINFALL (mm)= 81.60      81.60      81.60  
 RUNOFF COEFFICIENT = 0.93      0.49      0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0      Ia = Dep. 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 ( 0260)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0265):	9.06	1.807	3.00	46.85
+ ID2= 2 ( 0523):	6.61	1.525	3.00	57.60
=====				
ID = 3 ( 0260):	15.67	3.333	3.00	51.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

STANDHYD ( 0525)	Area (ha)=	PERVIOUS (i)
ID= 1 DT= 5.0 min	1.45	65.00
	Total Imp(%)=	Dir. Conn.(%)= 65.00

IMPERVIOUS      PERVIOUS (i)  
 Surface Area (ha)= 0.94      0.51  
 Dep. Storage (mm)= 6.00      8.00  
 Average Slope (%)= 1.00      1.00  
 Length (m)= 98.32      40.00  
 Mannings n = 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30      71.29  
                                  over (min)      5.00      15.00  
 Storage Coeff. (min)= 2.30 (ii)      12.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00      15.00  
 Unit Hyd. peak (cms)= 0.30      0.09  
  
 PEAK FLOW (cms)= 0.33      0.06      \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00      3.08      3.381 (iii)  
 RUNOFF VOLUME (mm)= 75.60      35.32      61.50  
 TOTAL RAINFALL (mm)= 81.60      81.60      81.60  
 RUNOFF COEFFICIENT = 0.93      0.43      0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1      Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STANDHYD ( 0527)

ID= 1 DT= 5.0 min	Area (ha)=	PERVIOUS (i)
	1.68	52.00
	Total Imp(%)=	Dir. Conn.(%)= 76.00

IMPERVIOUS      PERVIOUS (i)  
 Surface Area (ha)= 1.28      0.40  
 Dep. Storage (mm)= 6.00      8.00  
 Average Slope (%)= 1.00      1.00  
 Length (m)= 105.83      40.00  
 Mannings n = 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30      207.52  
                                  over (min)      5.00      10.00  
 Storage Coeff. (min)= 2.40 (ii)      8.89 (ii)  
 Unit Hyd. Tpeak (min)= 5.00      10.00  
 Unit Hyd. peak (cms)= 0.30      0.12  
  
 PEAK FLOW (cms)= 0.31      0.17      \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00      3.00      0.480 (iii)  
 RUNOFF VOLUME (mm)= 75.60      54.26      65.36  
 TOTAL RAINFALL (mm)= 81.60      81.60      81.60  
 RUNOFF COEFFICIENT = 0.93      0.66      0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

ADD HYD ( 0272)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0260):	15.67	3.333	3.00	51.39
+ ID2= 2 ( 0525):	1.45	0.381	3.00	61.50
=====				
ID = 3 ( 0272):	17.12	3.713	3.00	52.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0264)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0272):	17.12	3.713	3.00	52.24
+ ID2= 2 ( 0524):	7.22	1.012	3.08	40.19
=====				
ID = 3 ( 0264):	24.34	4.650	3.00	48.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

CN\* = 79.2 Ia = Dep. 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 ( 0270)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0264):	24.34	4.650	3.00	48.67
+ ID2= 2 ( 0527):	1.68	0.480	3.00	65.36
ID = 3 ( 0270):	26.02	5.130	3.00	49.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 5202)	2.27	61.00	61.00
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.38	0.89	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	123.02	40.00	
Mannings n =	0.013	0.250	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26

OUTFLOW: ID= 1 ( 0274) 28.290 0.262 5.08 50.42

PEAK FLOW REDUCTION [Qout/Qin](%) = 4.59  
TIME SHIFT OF PEAK FLOW (min)=125.00  
MAXIMUM STORAGE USED (ha.m.) = 1.1634

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0526)	0.94	78.00	78.00
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.73	0.21	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	79.16	40.00	
Mannings n =	0.013	0.250	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 76.18  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.02 (ii) 6.77 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*

1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 75.92  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.63 (ii) 12.33 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 0.49 0.11 0.578 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 37.60 60.78  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.46 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0273)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0270):	26.02	5.130	3.00	49.75
+ ID2= 2 ( 5202):	2.27	0.578	3.00	60.78
ID = 3 ( 0273):	28.29	5.708	3.00	50.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0274)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 5.0 min	0.0000	0.0000	0.1400	0.8343
	0.0195	0.2416	0.2360	1.0014
	0.0700	0.5564	0.3420	1.6616

INFLOW : ID= 2 ( 0273)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	28.290	5.708	3.00	50.63

PEAK FLOW (cms)= 0.26 0.03 0.292 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 75.60 37.73 67.26  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.46 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0279)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 5.0 min	0.0000	0.0000	0.0476	0.0432
	0.0096	0.0220	0.0579	0.0480
	0.0206	0.0306	0.0671	0.0528
	0.0297	0.0360	0.0000	0.0000

INFLOW : ID= 2 ( 0526)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	0.940	0.292	3.00	67.26

OUTFLOW: ID= 1 ( 0279)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
	0.940	0.043	3.50	66.65

PEAK FLOW REDUCTION [Qout/Qin](%) = 14.58  
TIME SHIFT OF PEAK FLOW (min)= 30.00  
MAXIMUM STORAGE USED (ha.m.) = 0.0412

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0574)	1.44	78.00	78.00
ID= 1 DT= 5.0 min			
	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.12	0.32	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	97.98	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0573) | Area (ha)= 2.66  
ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.60 1.06  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 133.17 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30  
over (min)= 5.00  
Storage Coeff. (min)= 2.75 (ii) 13.55 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.28 0.08

PEAK FLOW (cms)= 0.56 0.11 0.653 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 75.60 34.03 58.97  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.42 0.72

\*TOTALS\*

0.653 (iii)

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
3 + 2 = 1 |  
ID1= 3 ( 0102): 30.67 0.349 3.58 51.62  
+ ID2= 2 ( 0280): 33.56 0.314 5.17 56.97  
ID = 1 ( 0102): 64.23 0.645 4.00 54.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
1 + 2 = 3 |  
ID1= 1 ( 0102): 64.23 0.645 4.00 54.41  
+ ID2= 2 ( 0481): 18.79 3.230 3.00 45.17  
ID = 3 ( 0102): 83.02 3.496 3.00 52.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102) |  
3 + 2 = 1 |  
ID1= 3 ( 0102): 83.02 3.496 3.00 52.32  
+ ID2= 2 ( 0502): 117.52 3.728 3.83 30.62  
ID = 1 ( 0102): 200.54 5.418 3.00 39.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503) |  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700

0.0900 / 0.0700 Main Channel

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.8 Ia = Dep. 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 ( 0285) |  
1 + 2 = 3 |  
ID1= 1 ( 0282): 30.90 6.909 3.00 57.53  
+ ID2= 2 ( 0573): 2.66 0.653 3.00 58.97  
ID = 3 ( 0285): 33.56 7.562 3.00 57.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0280) | OVERFLOW IS OFF  
IN= 2---> OUT= 1 |  
DT= 5.0 min |  
OUTFLOW (cms) STORAGE (ha.m.) | OUTFLOW (cms) STORAGE (ha.m.)  
0.0000 0.0000 | 0.2300 1.1312  
0.0230 0.3704 | 0.2810 1.3850  
0.0900 0.8066 | 0.4120 2.2335  
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
INFLOW : ID= 2 ( 0285) 33.560 7.562 3.00 57.64  
OUTFLOW: ID= 1 ( 0280) 33.560 0.314 5.17 56.97

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.16  
TIME SHIFT OF PEAK FLOW (min)=130.00  
MAXIMUM STORAGE USED (ha.m.)= 1.6003

ADD HYD ( 0102) |  
1 + 2 = 3 |  
ID1= 1 ( 0274): 28.29 0.262 5.08 50.42  
+ ID2= 2 ( 0275): 2.38 0.108 3.50 65.90  
ID = 3 ( 0102): 30.67 0.349 3.58 51.62

127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<--- hydrograph ---> <-pipe / channel-->

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
INFLOW : ID= 2 ( 0102) 200.54 5.42 3.00 39.60 1.24 1.07  
OUTFLOW: ID= 1 ( 0503) 200.54 4.99 3.50 39.60 1.20 1.05

CALIB

STANDHYD ( 5032) Area (ha)= 13.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.49 3.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min)= 5.00  
 Storage Coeff. (min)= 4.51 (ii) 13.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.15 0.55 3.609 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 37.97 63.18  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<---- hydrograph ----> <-pipe / channel->

AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	214.34	8.09	3.00	41.12	0.81
OUTFLOW: ID= 1 ( 0504)	214.34	5.72	3.17	41.12	0.75

CALIB STANDHYD ( 5042) Area (ha)= 7.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.77 1.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 226.57 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90

CN\* = 71.0 Ia = Dep. 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)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0503):	200.54	4.987	3.50
+ ID2= 2 ( 5032):	13.80	3.609	3.00
=====			
ID = 3 ( 0104):	214.34	8.093	3.00
			41.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67

0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 over (min)= 5.00  
 Storage Coeff. (min)= 3.79 (ii) 12.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 1.73 0.31 1.988 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 35.71 61.64  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.44 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106)  
 1 + 2 = 3

AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):	214.34	5.717	3.17
+ ID2= 2 ( 5042):	7.70	1.988	3.00
=====			
ID = 3 ( 0106):	222.04	6.771	3.00
			41.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 5212) Area (ha)= 15.70

|ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.78 3.93
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 323.52 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Max. Eff. Inten. (mm/hr)= 127.30 117.36
over (min)= 5.00 15.00
Storage Coeff. (min)= 4.69 (ii) 12.84 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*
4.156 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 77.0 Ia = Dep. 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 ( 0114)
1 + 2 = 3
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 0106): 222.04 6.771 3.00 41.83
+ ID2= 2 ( 5212): 15.70 4.156 3.00 64.72
ID = 3 ( 0114): 237.74 10.927 3.00 43.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)
IN= 2--> OUT= 1
Routing time step (min)'= 5.00

DATA FOR SECTION ( 553.6)

Table with 4 columns: Distance, Elevation, Manning, and a fourth column with values like 0.1100, 0.1100, etc.

TRAVEL TIME TABLE

Table with 6 columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV. TIME. Rows show travel time data for different depths.

Table with 8 columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL. Rows show hydrograph data for inflow and outflow.

<--- hydrograph ---> <-pipe / channel->

CALIB
STANDHYD ( 5052)
ID= 1 DT= 5.0 min
Area (ha)= 15.90
Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.77 4.13
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 325.58 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

ADD HYD ( 0108)
1 + 2 = 3
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 0505): 237.74 9.714 3.08 43.34
+ ID2= 2 ( 5052): 15.90 4.002 3.00 61.32
ID = 3 ( 0108): 253.64 13.395 3.00 44.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)
IN= 2--> OUT= 1
Routing time step (min)'= 5.00

Max. Eff. Inten. (mm/hr)= 127.30 93.10
over (min)= 5.00 15.00
Storage Coeff. (min)= 4.71 (ii) 13.65 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.22 0.08
\*TOTALS\*
PEAK FLOW (cms)= 3.50 0.60 4.002 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 75.60 34.81 61.32
TOTAL RAINFALL (mm)= 81.60 81.60 81.60
RUNOFF COEFFICIENT = 0.93 0.43 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 68.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

OUTFLOW: ID= 1 ( 0506) 253.64 11.77 3.08 44.47 1.65 1.09

CALIB	Area (ha)=	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 5062)	11.70		
ID= 1 DT= 5.0 min	Total Imp(%)= 75.00		Dir. Conn.(%)= 65.00
Surface Area (ha)=	8.78		2.92
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	279.28		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	106.57
over (min)=	5.00	15.00
Storage Coeff. (min)=	4.30 (ii)	12.77 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.23	0.08
PEAK FLOW (cms)=	2.60	0.51
TIME TO PEAK (hrs)=	3.00	3.08
		*TOTALS*
		3.026 (iii)
		3.00

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLW : ID= 2 ( 0108)	253.64	13.39	3.00	44.47	1.70

<---- hydrograph ---->

<-pipe / channel->

RUNOFF VOLUME (mm)=	75.60	38.39	62.58
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.47	0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0110)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0506):	253.64	11.772	3.08	44.47
+ ID2= 2 ( 5062):	11.70	3.026	3.00	62.58
ID = 3 ( 0110):	265.34	13.760	3.00	45.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 5102)	1.70		
ID= 1 DT= 5.0 min	Total Imp(%)= 64.00		Dir. Conn.(%)= 52.00
Surface Area (ha)=	1.09		0.61
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	106.46		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26

Max.Eff.Inten.(mm/hr)=	127.30	87.16
over (min)=	5.00	15.00
Storage Coeff. (min)=	2.41 (ii)	11.59 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.30	0.09
PEAK FLOW (cms)=	0.31	0.09
TIME TO PEAK (hrs)=	3.00	3.08
RUNOFF VOLUME (mm)=	75.60	32.90
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.40
		*TOTALS*
		0.385 (iii)
		3.00

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN ( 0511)	Routing time step (min)'=
IN= 2---> OUT= 1	5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	





\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0512):	4.70	0.634	3.08	57.94
+ ID2= 2 ( 5122):	3.90	0.952	3.00	59.19
=====				
ID = 3 ( 0119):	8.60	1.541	3.00	58.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0110):	265.34	13.760	3.00	45.27
+ ID2= 2 ( 0119):	8.60	1.541	3.00	58.50
=====				
ID = 3 ( 0120):	273.94	15.301	3.00	45.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6011)	44.10	62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.83	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90

0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.276 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6012)	11.00	16.00
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00	

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)	3.08	7.92	
Dep. Storage (mm)	6.00	8.00	
Average Slope (%)	1.00	1.00	
Length (m)	270.80	40.00	
Mannings n	0.013	0.250	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26

0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 52.38  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.22 (ii) 15.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.60 0.69 1.070 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 26.83 34.64  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.33 0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

\*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6011):	44.10	1.276	3.83	23.63
+ ID2= 2 ( 6012):	11.00	1.070	3.00	34.64
=====				
ID = 3 ( 0124):	55.10	1.597	3.50	25.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6021)	43.60	62.0

ID= 1 DT= 5.0 min	Ia (mm)	# of Linear Res.(N)
	8.00	3.00
	U.H. Tp(hrs)= 0.95	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.141 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6022)	12.90	23.00
ID= 1 DT= 5.0 min	Total Imp(%)= 35.00	

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)	4.51	8.38	
Dep. Storage (mm)	6.00	8.00	
Average Slope (%)	1.00	1.00	
Length (m)	293.26	40.00	
Mannings n	0.013	0.250	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 53.84  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.42 (ii) 15.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 1.01 0.74 1.520 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 103.50  
 RUNOFF VOLUME (mm)= 75.60 27.16 38.30  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.33 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125) |

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0021):	43.60	1.141	4.00	23.63
+ ID2= 2 ( 0022):	12.90	1.520	3.00	38.30
ID = 3 ( 0125):	56.50	1.733	3.00	26.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	1.597	3.50	25.82
+ ID2= 2 ( 0125):	56.50	1.733	3.00	26.98
ID = 3 ( 0126):	111.60	3.093	3.00	26.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0603) |  
 | IN= 2----> OUT= 1 |  
 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
-------	------	--------	-----------	----------	-----------

(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.146 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 26.463  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.324

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<---- hydrograph ----> <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0126)	111.60	3.09	3.00	26.41	0.65
OUTFLOW: ID= 1 ( 0603)	111.60	2.16	4.58	26.40	0.59

| CALIB |  
 | NASHYD ( 0613) | Area (ha)= 1.77 Curve Number (CN)= 66.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.22

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26

| CALIB |  
 | STANDHYD ( 6222) | Area (ha)= 2.02  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.58 0.44  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 116.05 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26

0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 59.51  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.54 (ii) 7.29 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.14

PEAK FLOW (cms)= 0.55 0.05 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.608 (iii)  
RUNOFF VOLUME (mm)= 75.60 29.57 65.47  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.36 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0614) Area (ha)= 1.50  
ID= 1 DT= 5.0 min Total Imp(%)= 69.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.04	0.47
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	100.00	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 59.51  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.58 (ii) 7.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.13

PEAK FLOW (cms)= 0.59 0.06 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.644 (iii)  
RUNOFF VOLUME (mm)= 75.60 29.57 65.47  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.36 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0618) Area (ha)= 1.49  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 110.59  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.32 (ii) 10.67 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.26 0.09 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.339 (iii)  
RUNOFF VOLUME (mm)= 75.60 34.77 55.18  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.43 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0615) Area (ha)= 2.14  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.67	0.47
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	119.44	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.16	0.33
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	99.67	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 187.52  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.31 (ii) 9.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.30 0.12

PEAK FLOW (cms)= 0.26 0.12 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.384 (iii)  
RUNOFF VOLUME (mm)= 75.60 42.46 59.02  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.52 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) ID= 1 DT= 5.0 min	Area (ha)= 0.86 Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00
	IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=	0.81      0.05
Dep. Storage (mm)=	6.00      8.00
Average Slope (%)=	1.00      1.00
Length (m)=	75.72      40.00
Mannings n	= 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26
Max. Eff. Inten. (mm/hr)= 127.30      48.76							
over (min) = 5.00      5.00							
Storage Coeff. (min)= 1.96 (ii)      4.59 (ii)							
Unit Hyd. Tpeak (min)= 5.00      5.00							
Unit Hyd. peak (cms)= 0.31      0.23							
*TOTALS*							
PEAK FLOW (cms)= 0.29      0.01      0.292 (iii)							
TIME TO PEAK (hrs)= 3.00      3.00							
RUNOFF VOLUME (mm)= 75.60      24.35      72.52							

over (min)	5.00	10.00
Storage Coeff. (min)=	2.64 (ii)	9.08 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.12
*TOTALS*		
PEAK FLOW (cms)=	0.41	0.22      0.621 (iii)
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	75.60	48.17      61.88
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.59      0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0290) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0614):	1.50	0.339	3.00	55.18
+ ID2= 2 ( 0615):	2.14	0.644	3.00	65.47
ID = 3 ( 0290):	3.64	0.983	3.00	61.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0290):	3.64	0.983	3.00	61.23
+ ID2= 2 ( 0617):	2.31	0.621	3.00	61.88
ID = 1 ( 0290):	5.95	1.605	3.00	61.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0290):	5.95	1.605	3.00	61.48

TOTAL RAINFALL (mm)= 81.60      81.60      81.60  
 RUNOFF COEFFICIENT = 0.93      0.30      0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0617) ID= 1 DT= 5.0 min	Area (ha)= 2.31 Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00
	IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=	1.80      0.51
Dep. Storage (mm)=	6.00      8.00
Average Slope (%)=	1.00      1.00
Length (m)=	124.10      40.00
Mannings n	= 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26
Max. Eff. Inten. (mm/hr)= 127.30      211.23							

Max. Eff. Inten. (mm/hr)= 127.30      211.23

+ ID2= 2 ( 0618):	1.49	0.384	3.00	59.02
ID = 3 ( 0290):	7.44	1.989	3.00	60.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290) 3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0290):	7.44	1.989	3.00	60.99
+ ID2= 2 ( 0622):	2.02	0.608	3.00	65.47
ID = 1 ( 0290):	9.46	2.597	3.00	61.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290) 1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0290):	9.46	2.597	3.00	61.95
+ ID2= 2 ( 0632):	0.86	0.292	3.00	72.52
ID = 3 ( 0290):	10.32	2.889	3.00	62.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 6212) ID= 1 DT= 5.0 min	Area (ha)= 1.15 Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00
	IMPERVIOUS      PERVIOUS (i)
Surface Area (ha)=	0.75      0.40
Dep. Storage (mm)=	6.00      8.00
Average Slope (%)=	1.00      1.00
Length (m)=	87.56      40.00
Mannings n	= 0.013      0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90

0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 40.75  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.14 (ii) 14.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.26 0.03 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 0.287 (iii)  
 RUNOFF VOLUME (mm)= 75.60 24.35 57.65  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.30 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6232) Area (ha)= 0.85  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.55	0.30
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	75.28	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 40.75  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 1.96 (ii) 14.40 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.20 0.02 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 0.212 (iii)  
 RUNOFF VOLUME (mm)= 75.60 24.35 57.65  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.30 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0288)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6212):	1.15	0.287	3.00	57.65
+ ID2= 2 ( 6232):	0.85	0.212	3.00	57.65
ID = 3 ( 0288):	2.00	0.499	3.00	57.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0626) Area (ha)= 0.96  
 ID= 1 DT= 5.0 min Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.58	0.38
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	80.00	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 77.39  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.03 (ii) 11.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

PEAK FLOW (cms)= 0.20 0.05 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.245 (iii)  
 RUNOFF VOLUME (mm)= 75.60 38.33 60.68  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0297)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0288):	2.00	0.499	3.00	57.65
+ ID2= 2 ( 0290):	10.32	2.889	3.00	62.83
ID = 3 ( 0297):	12.32	3.388	3.00	61.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)  
 3 + 2 = 1 AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0297):	12.32	3.388	3.00	61.99
+ ID2= 2 ( 0613):	1.77	0.146	3.00	26.46
ID = 1 ( 0297):	14.09	3.513	3.00	57.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0297):	14.09	3.513	3.00	57.53
+ ID2= 2 ( 0626):	0.96	0.245	3.00	60.68
ID = 3 ( 0297):	15.05	3.758	3.00	57.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0302)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1070	0.3146
0.0150	0.1715	0.7100	0.8031

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0297)	15.050	3.758	3.00	57.73
OUTFLOW : ID= 1 ( 0302)	15.050	0.449	3.58	57.53

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.94  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.5913

CALIB  
STANDHYD ( 6202)  
ID= 1 DT= 5.0 min

Area (ha)= 1.26  
Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.18	0.08
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	91.65	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.29	0.69
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	114.89	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	40.74
over (min)	5.00	15.00
Storage Coeff. (min)=	2.52 (ii)	14.96 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.29	0.08
		*TOTALS*
PEAK FLOW (cms)=	0.45	0.05
TIME TO PEAK (hrs)=	3.00	3.17
RUNOFF VOLUME (mm)=	75.60	24.34
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.30

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL

1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	48.76
over (min)	5.00	5.00
Storage Coeff. (min)=	2.20 (ii)	4.83 (ii)
Unit Hyd. Tpeak (min)=	5.00	5.00
Unit Hyd. peak (cms)=	0.30	0.22
		*TOTALS*
PEAK FLOW (cms)=	0.42	0.01
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	75.60	24.35
TOTAL RAINFALL (mm)=	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.30

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0292)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0580	0.0848
0.0090	0.0366	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 6202)	1.260	0.427	3.00	72.52
OUTFLOW : ID= 1 ( 0292)	1.260	0.039	3.58	71.71

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.11  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0662

CALIB  
STANDHYD ( 0606)  
ID= 1 DT= 5.0 min

Area (ha)= 1.98  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

- THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0612)  
ID= 1 DT= 5.0 min

Area (ha)= 2.18  
Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	2.05	0.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	120.55	40.00
Mannings n	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	48.76
over (min)	5.00	10.00
Storage Coeff. (min)=	2.59 (ii)	5.22 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.29	0.16
		*TOTALS*
PEAK FLOW (cms)=	0.72	0.01
TIME TO PEAK (hrs)=	3.00	3.00
RUNOFF VOLUME (mm)=	75.60	24.35

TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.30 0.89

ID = 1 ( 0306): 5.42 0.565 3.00 66.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0304)  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

RESERVOIR( 0295)  
 IN= 2--> OUT= 1  
 DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

INFLOW : ID= 2 ( 0612) 2.180 0.734 3.00 72.52  
 OUTFLOW: ID= 1 ( 0295) 2.180 0.067 3.58 72.06

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.19  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1143

ADD HYD ( 0306)  
 1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.26	0.039	3.58	71.71
2.18	0.067	3.58	72.06
3.44	0.106	3.58	71.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0306)  
 3 + 2 = 1

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3.44	0.106	3.58	71.93
1.98	0.492	3.00	57.66

----- hydrograph -----

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
5.42	0.56	3.00	66.72	0.23	0.71
5.42	0.28	3.08	66.71	0.16	0.56

INFLOW : ID= 2 ( 0306)  
 OUTFLOW: ID= 1 ( 0304)

TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47 0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0616)  
 ID= 1 DT= 5.0 min

Area (ha)= 0.44  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.10
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	54.16	40.00
Mannings n =	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 77.39  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.61 (ii) 6.36 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.32 0.15

\*TOTALS\*  
 PEAK FLOW (cms)= 0.12 0.02 0.138 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 38.33 67.39

CALIB  
 STANDHYD ( 6102)  
 ID= 1 DT= 5.0 min

Area (ha)= 2.49  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.94	0.55
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	128.84	40.00
Mannings n =	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 244.24

over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.70 (ii) 8.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.29 0.12

\*TOTALS\*  
 PEAK FLOW (cms)= 0.44 0.28 0.716 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 56.86 66.23  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.70 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.3 Ia = Dep. 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 ( 0624) | Area (ha)= 0.89  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.69 0.20  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 77.03 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26

1.083 4.90 | 2.583 48.96 | 4.083 6.53 | 5.58 3.26  
 1.167 4.90 | 2.667 48.96 | 4.167 6.53 | 5.67 3.26  
 1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 77.39  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 1.98 (ii) 6.74 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*  
 PEAK FLOW (cms)= 0.24 0.03 0.278 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 75.60 38.33 67.40  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47 0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0286)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6102):	2.49	0.716	3.00	66.23
+ ID2= 2 ( 0616):	0.44	0.138	3.00	67.39
-----				
ID = 3 ( 0286):	2.93	0.854	3.00	66.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)  
 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0286):	2.93	0.854	3.00	66.40
+ ID2= 2 ( 0624):	0.89	0.278	3.00	67.40
-----				
ID = 1 ( 0286):	3.82	1.131	3.00	66.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0305) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1760	0.2330
0.0280	0.0927	0.0000	0.0000

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 INFLOW : ID= 2 ( 0286) 3.820 1.131 3.00 66.63  
 OUTFLOW: ID= 1 ( 0305) 3.820 0.117 3.58 66.42

PEAK FLOW REDUCTION [Qout/Qin](%)= 10.37  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1775

CALIB  
 STANDHYD ( 0619) | Area (ha)= 1.64  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.07 0.57  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 104.56 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26

1.083 4.90 | 2.583 48.96 | 4.083 6.53 | 5.58 3.26  
 1.167 4.90 | 2.667 48.96 | 4.167 6.53 | 5.67 3.26  
 1.250 4.90 | 2.750 88.13 | 4.250 6.53 | 5.75 3.26  
 1.333 4.90 | 2.833 88.13 | 4.333 6.53 | 5.83 3.26  
 1.417 4.90 | 2.917 127.30 | 4.417 6.53 | 5.92 3.26  
 1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 86.94  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.38 (ii) 11.57 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.38 0.09 0.447 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 43.13 64.23  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.53 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0293)  
 1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0302):	15.05	0.449	3.58	57.53
+ ID2= 2 ( 0304):	5.42	0.285	3.08	66.71
-----				
ID = 3 ( 0293):	20.47	0.665	3.50	59.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)  
 3 + 2 = 1

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0293):	20.47	0.665	3.50	59.96
+ ID2= 2 ( 0305):	3.82	0.117	3.58	66.42
-----				
ID = 1 ( 0293):	24.29	0.781	3.50	60.98



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	24.29	0.781	3.50	60.98
+ ID2= 2 ( 0619):	1.64	0.447	3.00	64.23
=====				
ID = 3 ( 0293):	25.93	1.044	3.00	61.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6032)	29.63	47.00	32.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	13.93	15.70
Dep. Storage	1.50	8.00
Average Slope	1.00	1.00
Length	444.45	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	95.24	
over (min)	5.00	15.00	
Storage Coeff. (min)=	5.68 (ii)	14.54 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.20	0.08	
*TOTALS*			
PEAK FLOW (cms)=	3.14	2.29	5.041 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	80.10	37.28	50.98
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.98	0.46	0.62

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	25.93	1.044	3.00	61.18
+ ID2= 2 ( 0603):	111.60	2.157	4.58	26.40
=====				
ID = 3 ( 0128):	137.53	2.833	4.42	32.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	137.53	2.833	4.42	32.96
+ ID2= 2 ( 0603):	29.63	5.041	3.00	50.98
=====				
ID = 1 ( 0128):	167.16	6.640	3.00	36.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)	Routing time step (min)
ID= 2----> OUT= 1	5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700 Main Channel
166.55	83.78	0.0700 Main Channel
168.05	84.78	0.0700 / 0.1100 Main Channel
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6042)	24.00	78.00	69.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	18.72	5.28
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	400.00	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	129.18	
over (min)	5.00	15.00	
Storage Coeff. (min)=	5.33 (ii)	10.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.21	0.09	
*TOTALS*			
PEAK FLOW (cms)=	5.53	1.23	6.596 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.16	6.64	3.00	36.16	2.48	0.08
OUTFLOW: ID= 1 ( 0604)	167.16	2.67	4.33	36.15	2.03	0.10

RUNOFF VOLUME (mm)= 75.60 46.55 66.59  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.57 0.82

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0604):	167.16	2.666	4.33	36.15
+ ID2= 2 ( 6042):	24.00	6.596	3.00	66.59
ID = 3 ( 0130):	191.16	8.600	3.00	39.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.83	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

INFLOW : ID= 2 ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
191.16	191.16	8.60	3.00	39.97	1.19	0.32
OUTFLOW: ID= 1 ( 0605)	191.16	3.88	3.25	39.97	0.94	0.31

CALIB  
 STANDHYD ( 6112) | Area (ha)= 11.40  
 ID= 1 DT= 5.0 min | Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	8.21	3.19
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	275.68	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 111.68  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.26 (ii) 12.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 2.42 0.59 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 2.916 (iii)  
 RUNOFF VOLUME (mm)= 75.60 41.50 62.64  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0139)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0605):	191.16	3.875	3.25	39.97
+ ID2= 2 ( 6112):	11.40	2.916	3.00	62.64
ID = 3 ( 0139):	202.56	5.842	3.00	41.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6052) | Area (ha)= 15.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	11.77	4.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	325.58	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 88.54  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.71 (ii) 13.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 3.50 0.57 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 3.971 (iii)  
 RUNOFF VOLUME (mm)= 75.60 33.11 60.73  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60

RUNOFF COEFFICIENT = 0.93 0.41 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0139):	202.56	5.842	3.00	41.25
+ ID2= 2 ( 6052):	15.90	3.971	3.00	60.73
ID = 3 ( 0132):	218.46	9.814	3.00	42.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.46	9.81	3.00	42.66	0.82	0.75
OUTFLOW : ID= 1 ( 0530)	218.46	7.68	3.08	42.66	0.73	0.72

CALIB  
STANDHYD ( 5302) | Area (ha)= 5.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	3.83	1.97
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	196.64	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr

---- TRANSFORMED HYETOGRAPH ----

0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	82.95	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.48 (ii)	12.84 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.08	
			*TOTALS*
PEAK FLOW (cms)=	1.13	0.26	1.344 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	75.60	32.22	56.51
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.39	0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0530):	218.46	7.681	3.08	42.66
+ ID2= 2 ( 5302):	5.80	1.344	3.00	56.51
ID = 3 ( 0134):	224.26	8.500	3.00	43.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0120):	273.94	15.301	3.00	45.68
+ ID2= 2 ( 0134):	224.26	8.500	3.00	43.02
ID = 3 ( 0135):	498.20	23.801	3.00	44.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
1.14	77.41	.516E+04	4.0	0.59	21.56	
1.30	77.57	.660E+04	5.7	0.66	19.26	
1.46	77.74	.822E+04	7.8	0.72	17.67	
1.62	77.90	.100E+05	10.1	0.77	16.48	
1.79	78.06	.120E+05	12.8	0.82	15.54	
1.95	78.22	.141E+05	15.9	0.87	14.74	
2.11	78.39	.163E+05	19.4	0.91	14.06	
2.27	78.55	.187E+05	23.2	0.95	13.47	
2.44	78.71	.212E+05	27.3	0.99	12.95	
2.60	78.87	.239E+05	31.9	1.02	12.50	
2.76	79.04	.267E+05	36.8	1.06	12.10	
2.92	79.20	.320E+05	39.4	0.94	13.56	
3.09	79.36	.409E+05	45.7	0.85	14.94	

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0135)	498.20	23.80	3.00	44.48	2.30	0.95
OUTFLOW : ID= 1 ( 0507)	498.20	18.68	3.17	44.48	2.08	0.90

0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)=	127.30	99.72
over (min)	5.00	20.00
Storage Coeff. (min)=	6.60 (ii)	15.30 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.18	0.07

PEAK FLOW (cms)=	5.69	3.51	8.194 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	75.60	39.14	52.26
TOTAL RAINFALL (mm)=	81.60	81.60	81.60
RUNOFF COEFFICIENT =	0.93	0.48	0.64

CALIB		Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 5072)	ID= 1 DT= 5.0 min	48.90	36.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	24.45
Dep. Storage (mm)=	6.00
Average Slope (%)=	1.00
Length (m)=	570.96
Mannings n	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0507):	498.20	18.682	3.17	44.48
+ ID2= 2 ( 5072):	48.90	8.194	3.00	52.26
ID = 3 ( 0122):	547.10	24.124	3.17	45.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 5402)	ID= 1 DT= 5.0 min	9.40	35.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.70
Dep. Storage (mm)=	6.00
Average Slope (%)=	1.00
Length (m)=	250.33
Mannings n	0.250

CALIB		Area (ha)=	Dir. Conn.(%)=
STANDHYD ( 1505)	ID= 1 DT= 5.0min	30.00	

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	30.00
Dep. Storage (mm)=	15.58
Average Slope (%)=	1.00
Length (m)=	402.14
Mannings n	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

STORE HYD( 1505)	AREA (ha)=	QPEAK (cms)=	TPEAK (hrs)=	VOLUME (mm)=
ID= 1 DT= 5.0min	30.00	0.78	15.58	402.14

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
hrs	cms	hrs	cms	hrs	cms	hrs	cms	hrs	cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26	125.33	0.16
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26	125.42	0.16
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25	125.50	0.16
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25	125.58	0.16
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25	125.67	0.17
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25	125.75	0.16
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25	125.83	0.16
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25	125.92	0.17
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24	126.00	0.15
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25	126.08	0.16
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24	126.17	0.16
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25	126.25	0.16
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25	126.33	0.16
1.08	0.00	32.42	0.10	63.75	0.24	95.08	0.25	126.42	0.16
1.17	0.00	32.50	0.10	63.83	0.23	95.17	0.24	126.50	0.17
1.25	0.00	32.58	0.10	63.92	0.23	95.25	0.21	126.58	0.16
1.33	0.00	32.67	0.10	64.00	0.23	95.33	0.25	126.67	0.16
1.42	0.00	32.75	0.10	64.08	0.23	95.42	0.22	126.75	0.17
1.50	0.00	32.83	0.10	64.17	0.23	95.50	0.23	126.83	0.17
1.58	0.00	32.92	0.10	64.25	0.24	95.58	0.22	126.92	0.17
1.67	0.00	33.00	0.10	64.33	0.23	95.67	0.24	127.00	0.17
1.75	0.00	33.08	0.10	64.42	0.23	95.75	0.26	127.08	0.17
1.83	0.00	33.17	0.10	64.50	0.23	95.83	0.24	127.17	0.18
1.92	0.00	33.25	0.11	64.58	0.23	95.92	0.23	127.25	0.17
2.00	0.00	33.33	0.11	64.67	0.24	96.00	0.24	127.33	0.18
2.08	0.00	33.42	0.11	64.75	0.24	96.08	0.24	127.42	0.18
2.17	0.00	33.50	0.11	64.83	0.24	96.17	0.24	127.50	0.16
2.25	0.00	33.58	0.11	64.92	0.24	96.25	0.24	127.58	0.18
2.33	0.00	33.67	0.11	65.00	0.24	96.33	0.24	127.67	0.17
2.42	0.00	33.75	0.11	65.08	0.23	96.42	0.24	127.75	0.18
2.50	0.00	33.83	0.11	65.17	0.23	96.50	0.24	127.83	0.17
2.58	0.00	33.92	0.11	65.25	0.23	96.58	0.23	127.92	0.17
2.67	0.00	34.00	0.11	65.33	0.23	96.67	0.24	128.00	0.17
2.75	0.00	34.08	0.11	65.42	0.22	96.75	0.23	128.08	0.17
2.83	0.00	34.17	0.11	65.50	0.22	96.83	0.23	128.17	0.17
2.92	0.00	34.25	0.11	65.58	0.22	96.92	0.24	128.25	0.18
3.00	0.00	34.33	0.11	65.67	0.22	97.00	0.23	128.33	0.18
3.08	0.00	34.42	0.11	65.75	0.22	97.08	0.22	128.42	0.19
3.17	0.00	34.50	0.11	65.83	0.22	97.17	0.23	128.50	0.18
3.25	0.00	34.58	0.11	65.92	0.21	97.25	0.22	128.58	0.17
3.33	0.00	34.67	0.11	66.00	0.21	97.33	0.25	128.67	0.18
3.42	0.00	34.75	0.11	66.08	0.21	97.42	0.22	128.75	0.18

- \*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!
- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
  - (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
  - (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.



Table with 10 columns of numerical data, likely representing flow rates or volumes over time.

Table with 10 columns of numerical data, likely representing flow rates or volumes over time.

Table with 10 columns of numerical data, likely representing flow rates or volumes over time.

Table with 10 columns of numerical data, likely representing flow rates or volumes over time.

STORE HYD( 1605) AREA (ha)= 30.00
ID = 1 DT= 5.0min QPEAK (cms)= 1.37
TPEAK (hrs)= 71.92
VOLUME (mm)= 625.27

Table with 10 columns: TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW, TIME, FLOW. Includes sub-headers for hrs and cms.

Table with 10 columns of numerical data, likely representing flow rates or volumes over time.







0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 0.550 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 6.078  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.152

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5012) | Area (ha)= 37.32  
 ID= 1 DT= 5.0 min | Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.18 23.14  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 498.80 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38

0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 13.05  
 over (min)= 10.00 30.00  
 Storage Coeff. (min)= 8.12 (ii) 27.74 (ii)  
 Unit Hyd. Tpeak (min)= 10.00 30.00  
 Unit Hyd. peak (cms)= 0.13 0.04

PEAK FLOW (cms)= 1.25 0.41 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.42 1.404 (iii)  
 RUNOFF VOLUME (mm)= 34.03 7.74 14.05  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.19 0.35

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5011):	80.20	0.550	3.92	6.08
+ ID2= 2 ( 5012):	37.32	1.404	3.00	14.05
ID = 3 ( 0100):	117.52	1.503	3.08	8.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	
187.19	88.84	0.1100	
211.21	88.88	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

<---- hydrograph ----> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 0100) 117.52 1.50 3.08 8.61 0.70 0.74  
 OUTFLOW: ID= 1 ( 0502) 117.52 0.97 3.67 8.61 0.56 0.65

CALIB  
 NASHYD ( 5691) | Area (ha)= 2.30 Curve Number (CN)= 69.3  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.07

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.085 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 6.525  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.163

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

| NASHYD ( 5021) | Area (ha)= 3.67 Curve Number (CN)= 68.8  
 |ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 ----- U.H. Tp(hrs)= 0.43

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms) = 0.328

PEAK FLOW (cms) = 0.047 (i)  
 TIME TO PEAK (hrs) = 3.417  
 RUNOFF VOLUME (mm) = 6.981  
 TOTAL RAINFALL (mm) = 40.032  
 RUNOFF COEFFICIENT = 0.174

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| CALIB |  
 | STANDHYD ( 5092) | Area (ha)= 1.73  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.88	0.85
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	107.39	40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.38  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 3.23 (ii) 21.14 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms) = 0.27 0.05

PEAK FLOW (cms) = 0.15 0.02 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.33 0.158 (iii)  
 RUNOFF VOLUME (mm) = 34.03 11.56 22.92  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5082) | Area (ha)= 0.71  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.52	0.19
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	68.80	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.47  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.47 (ii) 21.30 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms) = 0.29 0.05

PEAK FLOW (cms) = 0.08 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.33 0.080 (iii)  
 RUNOFF VOLUME (mm) = 34.03 7.86 24.59  
 TOTAL RAINFALL (mm) = 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.20 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 62.7 Ia = Dep. 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 ( 5682) | Area (ha)= 0.53  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)	0.34	0.19
Dep. Storage (mm)	6.00	8.00
Average Slope (%)	1.00	1.00
Length (m)	59.44	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 6.03  
 over (min) = 5.00 30.00  
 Storage Coeff. (min)= 2.26 (ii) 28.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms) = 0.30 0.04

PEAK FLOW (cms) = 0.06 0.00 \*TOTALS\*  
 0.060 (iii)

TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 5.97 24.18  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.15 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB |  
 |STANDHYD ( 0501)| Area (ha)= 6.23  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.62 3.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 203.80 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 4.82  
 over (min) = 5.00 35.00  
 Storage Coeff. (min)= 4.74 (ii) 33.98 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.22 0.03

PEAK FLOW (cms)= 0.43 0.03 0.438 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.50 3.00  
 RUNOFF VOLUME (mm)= 34.03 4.82 17.08  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.12 0.43

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 58.4 Ia = Dep. 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 ( 0510)| Area (ha)= 0.76  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.59 0.17  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 71.18 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.38  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.52 (ii) 20.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.10 0.00 0.103 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.56 29.07  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5752)| Area (ha)= 0.78  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.51 0.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 72.11 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38

Max.Eff.Inten.(mm/hr)= 61.93 12.91  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.54 (ii) 22.25 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.09 0.01 0.089 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 9.34 25.37  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.23 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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 ( 5282)| Area (ha)= 2.08  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.64  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.41 (ii) 21.22 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.23 0.02 0.237 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 11.72 26.22  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.29 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 0481)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3				

+ ID2= 2 ( 5282): 2.08 0.237 3.00 26.22  
 ID = 3 ( 0481): 15.18 1.037 3.00 17.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	15.18	1.037	3.00	17.51
+ ID2= 2 ( 5682):	0.53	0.060	3.00	24.18
ID = 1 ( 0481):	15.71	1.097	3.00	17.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	15.71	1.097	3.00	17.74
+ ID2= 2 ( 5691):	2.30	0.085	3.00	6.53
ID = 3 ( 0481):	18.01	1.181	3.00	16.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	18.01	1.181	3.00	16.30
+ ID2= 2 ( 5752):	0.78	0.089	3.00	25.37
ID = 1 ( 0481):	18.79	1.270	3.00	16.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area	(ha)	Curve Number (CN)=
NASHYD ( 0524)	7.22	7.22	80.7
ID= 1 DT= 5.0 min	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.20	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0501):	6.23	0.438	3.00	17.08
+ ID2= 2 ( 5021):	3.67	0.047	3.42	6.98
ID = 3 ( 0481):	9.90	0.458	3.00	13.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	9.90	0.458	3.00	13.34
+ ID2= 2 ( 5082):	0.71	0.080	3.00	24.59
ID = 1 ( 0481):	10.61	0.538	3.00	14.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	10.61	0.538	3.00	14.09
+ ID2= 2 ( 5092):	1.73	0.158	3.00	22.92
ID = 3 ( 0481):	12.34	0.697	3.00	15.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
3 + 2 = 1	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0481):	12.34	0.697	3.00	15.33
+ ID2= 2 ( 0510):	0.76	0.103	3.00	29.07
ID = 1 ( 0481):	13.10	0.800	3.00	16.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0481):	13.10	0.800	3.00	16.13

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 0.261 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 11.019  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.275

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area	(ha)	Curve Number (CN)=
NASHYD ( 0522)	3.31	3.31	63.1
ID= 1 DT= 5.0 min	Ia	(mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)=	0.16	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38

0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.066 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 5.649  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.141

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0580) Area (ha)= 1.87  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.22 0.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 111.65 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38

0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 6.03  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 3.31 (ii) 30.02 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.26 0.04

PEAK FLOW (cms)= 0.21 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.50 0.208 (iii)  
 RUNOFF VOLUME (mm)= 34.03 5.97 24.20  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.15 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0519) Area (ha)= 2.08  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 3.41 (ii) 30.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.26 0.04

PEAK FLOW (cms)= 0.23 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.50 0.230 (iii)  
 RUNOFF VOLUME (mm)= 34.03 5.67 24.10  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.14 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0529) Area (ha)= 1.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71  
 over (min) 5.00 35.00  
 Storage Coeff. (min)= 3.27 (ii) 30.57 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 35.00  
 Unit Hyd. peak (cms)= 0.27 0.04

PEAK FLOW (cms)= 0.24 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.50 0.239 (iii)  
 RUNOFF VOLUME (mm)= 34.03 5.67 27.78  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.14 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0267 )				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0519):	2.08	0.230	3.00	24.10
+ ID2= 2 ( 0529):	1.80	0.239	3.00	27.78
=====				
ID = 3 ( 0267):	3.88	0.469	3.00	25.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0267 )				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0267):	3.88	0.469	3.00	25.81
+ ID2= 2 ( 0580):	1.87	0.208	3.00	24.20
=====				
ID = 1 ( 0267):	5.75	0.677	3.00	25.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0265 )				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0267):	5.75	0.677	3.00	25.28
+ ID2= 2 ( 0522):	3.31	0.066	3.00	5.65
=====				
ID = 3 ( 0265):	9.06	0.740	3.00	18.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0523 )				
ID= 1 DT= 5.0 min				
	Area (ha)=	Dir. Conn.(%)=		
	Total Imp(%)=			
	6.61	50.00		
	75.00			
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	4.96	1.65		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	209.92	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

+ ID2= 2 ( 0523):	6.61	0.609	3.00	22.89
=====				
ID = 3 ( 0260):	15.67	1.349	3.00	20.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0525 )				
ID= 1 DT= 5.0 min				
	Area (ha)=	Dir. Conn.(%)=		
	Total Imp(%)=			
	1.45	65.00		
	65.00			
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	0.94	0.51		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	98.32	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	12.66	
over (min)	5.00	25.00	
Storage Coeff. (min)=	3.06 (ii)	22.92 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.27	0.05	
			*TOTALS*
PEAK FLOW (cms)=	0.16	0.01	0.164 (iii)

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	38.71	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.83 (ii)	17.53 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
		*TOTALS*	
PEAK FLOW (cms)=	0.54	0.10	0.609 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	34.03	11.75	22.89
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.29	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0260 )				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0265):	9.06	0.740	3.00	18.11

TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	9.18	25.32
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.23	0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0272 )				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0260):	15.67	1.349	3.00	20.13
+ ID2= 2 ( 0525):	1.45	0.164	3.00	25.32
=====				
ID = 3 ( 0272):	17.12	1.514	3.00	20.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0264 )				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0272):	17.12	1.514	3.00	20.57
+ ID2= 2 ( 0524):	7.22	0.261	3.00	11.02
=====				
ID = 3 ( 0264):	24.34	1.738	3.00	17.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0527 )				
ID= 1 DT= 5.0 min				
	Area (ha)=	Dir. Conn.(%)=		
	Total Imp(%)=			
	1.68	52.00		
	76.00			
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	1.28	0.40		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	105.83	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 74.64  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.20 (ii) 12.97 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.15 0.05 0.188 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 34.03 18.71 26.67  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.47 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.2 Ia = Dep. 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 ( 0270)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3				

\*TOTALS\*

PEAK FLOW (cms)= 0.23 0.02 0.242 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.01 24.66  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.3 Ia = Dep. 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 ( 0273)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3				
ID1= 1 ( 0270):	26.02	1.927	3.00	18.31
+ ID2= 2 ( 5202):	2.27	0.242	3.00	24.66
ID = 3 ( 0273):	28.29	2.169	3.00	18.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

RESERVOIR( 0274)	OUTFLOW	STORAGE	OUTFLOW	STORAGE
IN= 2----> OUT= 1	(cms)	(ha.m.)	(cms)	(ha.m.)
DT= 5.0 min	0.0000	0.0000	0.1400	0.8343
	0.0195	0.2416	0.2360	1.0014
	0.0700	0.5564	0.3420	1.6616

INFLOW : ID= 2 ( 0273) 28.290 2.169 3.00 18.82  
 OUTFLOW: ID= 1 ( 0274) 28.290 0.057 6.08 18.68

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.62  
 TIME SHIFT OF PEAK FLOW (min)=185.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.4739

-----

CALIB	Area	(ha)=
STANDHYD ( 0526)	0.94	

-----

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0264):	24.34	1.738	3.00	17.73
+ ID2= 2 ( 0527):	1.68	0.188	3.00	26.67
ID = 3 ( 0270):	26.02	1.927	3.00	18.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----

CALIB	Area	(ha)=
STANDHYD ( 5202)	2.27	
ID= 1 DT= 5.0 min	Total Imp(%)=	61.00 Dir. Conn.(%)= 61.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.38 0.89  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 123.02 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 13.94  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.50 (ii) 22.62 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.26 0.05

|ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.73 0.21  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 79.16 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.01  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 2.69 (ii) 21.76 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.13 0.00 0.127 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.06 28.74  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.4 Ia = Dep. Storage (Above)

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR ( 0279 )  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
0.940	0.127	3.00	28.74
0.940	0.008	4.08	28.13

INFLOW : ID= 2 ( 0526)  
OUTFLOW: ID= 1 ( 0279)

PEAK FLOW REDUCTION [Qout/Qin](%) = 6.64  
TIME SHIFT OF PEAK FLOW (min) = 65.00  
MAXIMUM STORAGE USED (ha.m.) = 0.0193

CALIB  
STANDHYD ( 0574 )  
ID= 1 DT= 5.0 min

Area (ha) = 1.44  
Total Imp(%) = 78.00 Dir. Conn.(%) = 78.00

IMPERVIOUS (ha)	PERVIOUS (i)
1.12	0.32
6.00	8.00
1.00	1.00
97.98	40.00
0.013	0.250

Surface Area (ha) =  
Dep. Storage (mm) =  
Average Slope (%) =  
Length (m) =  
Mannings n =

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59

MAXIMUM STORAGE USED (ha.m.) = 0.0288

ADD HYD ( 0275 )  
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0276 ):	1.44	0.013	4.08	27.85
+ ID2= 2 ( 0279 ):	0.94	0.008	4.08	28.13
ID = 3 ( 0275 ):	2.38	0.022	4.08	27.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0571 )  
ID= 1 DT= 5.0 min

Area (ha) = 19.59  
Total Imp(%) = 68.00 Dir. Conn.(%) = 50.00

IMPERVIOUS (ha)	PERVIOUS (i)
13.32	6.27
6.00	8.00
1.00	1.00
361.39	40.00
0.013	0.250

Surface Area (ha) =  
Dep. Storage (mm) =  
Average Slope (%) =  
Length (m) =  
Mannings n =

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59

0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	8.93	
over (min)	5.00	30.00	
Storage Coeff. (min)=	3.06 (ii)	25.89 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.27	0.04	
PEAK FLOW (cms)=	0.19	0.00	0.192 (iii)
TIME TO PEAK (hrs)=	3.00	3.42	3.00
RUNOFF VOLUME (mm)=	34.03	7.71	28.23
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.19	0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR ( 0276 )  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.440	0.192	3.00	28.23
1.440	0.013	4.08	27.85

INFLOW : ID= 2 ( 0574)  
OUTFLOW: ID= 1 ( 0276)

PEAK FLOW REDUCTION [Qout/Qin](%) = 6.86  
TIME SHIFT OF PEAK FLOW (min) = 65.00

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)=	61.93	20.90	
over (min)	5.00	25.00	
Storage Coeff. (min)=	6.69 (ii)	22.94 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.18	0.05	
PEAK FLOW (cms)=	1.54	0.20	1.636 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	9.53	21.78
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.24	0.54

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.6 Ia = Dep. 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 ( 0572 )  
ID= 1 DT= 5.0 min

Area (ha) = 11.31  
Total Imp(%) = 71.00 Dir. Conn.(%) = 50.00

IMPERVIOUS (ha)	PERVIOUS (i)
8.03	3.28
6.00	8.00
1.00	1.00
274.59	40.00
0.013	0.250

Surface Area (ha) =  
Dep. Storage (mm) =  
Average Slope (%) =  
Length (m) =  
Mannings n =

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59



0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 44.53  
over (min) 5.00 20.00  
Storage Coeff. (min)= 5.67 (ii) 17.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.20 0.06

PEAK FLOW (cms)= 0.91 0.23  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 34.03 15.32  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.38

\*TOTALS\*  
1.061 (iii)  
3.00  
24.67  
40.03  
0.62

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0282)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0571):	19.59	1.636	3.00	21.78
+ ID2= 2 ( 0572):	11.31	1.061	3.00	24.67
=====				
ID = 3 ( 0282):	30.90	2.697	3.00	22.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0573)			
ID= 1 DT= 5.0 min			
Area (ha)=	2.66		
Total Imp(%)=	60.00	Dir. Conn.(%)=	60.00
=====			
	IMPERVIOUS	PERVIOUS (i)	
	(ha)		
Surface Area	1.60	1.06	
Dep. Storage	6.00	8.00	
Average Slope	1.00	1.00	

Length (m)= 133.17 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 10.21  
over (min) 5.00 30.00  
Storage Coeff. (min)= 3.67 (ii) 25.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.25 0.04

PEAK FLOW (cms)= 0.27 0.02  
TIME TO PEAK (hrs)= 3.00 3.42  
RUNOFF VOLUME (mm)= 34.03 8.72  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.22

\*TOTALS\*  
0.275 (iii)  
3.00  
23.90  
40.03  
0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.8 Ia = Dep. 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 ( 0285)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0282):	30.90	2.697	3.00	22.84
+ ID2= 2 ( 0573):	2.66	0.275	3.00	23.90
=====				
ID = 3 ( 0285):	33.56	2.972	3.00	22.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0280)				
OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.2300	1.1312
	0.0230	0.3704	0.2810	1.3850
	0.0900	0.8066	0.4120	2.2335
=====				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0285)	33.560	2.972	3.00	22.92
OUTFLOW: ID= 1 ( 0280)	33.560	0.073	6.08	22.43

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.44  
TIME SHIFT OF PEAK FLOW (min)=185.00  
MAXIMUM STORAGE USED (ha.m.)= 0.6937

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0274):	28.29	0.057	6.08	18.68
+ ID2= 2 ( 0275):	2.38	0.022	4.08	27.96
=====				
ID = 3 ( 0102):	30.67	0.076	6.00	19.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	30.67	0.076	6.00	19.40
+ ID2= 2 ( 0280):	33.56	0.073	6.08	22.43
=====				

ID = 1 ( 0102): 64.23 0.149 6.00 20.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0102):	64.23	0.149	6.00	20.99
+ ID2= 2 ( 0481):	18.79	1.270	3.00	16.68
=====				
ID = 3 ( 0102):	83.02	1.322	3.00	20.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0102):	83.02	1.322	3.00	20.01
+ ID2= 2 ( 0502):	117.52	0.973	3.67	8.61
=====				
ID = 1 ( 0102):	200.54	1.812	3.00	13.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
IN= 2----> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION (1157.9) -----			
Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 /0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 /0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	

297.51 87.86 0.0900  
 324.73 87.89 0.0900  
 351.95 87.78 0.0900  
 388.59 87.46 0.0900

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

Max.Eff.Inten.(mm/hr)= 61.93 20.79  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 6.02 (ii) 22.31 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 1.48 0.11 1.529 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.67 26.32  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.27 0.66

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 200.54 1.81 3.00 13.33 0.76 0.77  
 OUTFLOW: ID= 1 ( 0503) 200.54 1.44 3.08 13.33 0.68 0.73

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 5032) Area (ha)= 13.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.49 3.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ADD HYD ( 0104)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0503): 200.54	1.441	3.08	13.33

+ ID2= 2 ( 5032): 13.80 1.529 3.00 26.32  
 ID = 3 ( 0104): 214.34 2.884 3.00 14.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

ROUTE CHN( 0504)  
 IN= 2--> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0104) 214.34 2.88 3.00 14.16 0.65 0.30  
 OUTFLOW: ID= 1 ( 0504) 214.34 1.88 3.17 14.16 0.60 0.29

CALIB  
 STANDHYD ( 5042) Area (ha)= 7.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.77 1.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 226.57 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.38  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 5.05 (ii) 21.81 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.21 0.05

PEAK FLOW (cms)= 0.82 0.06  
 TIME TO PEAK (hrs)= 3.00 3.33  
 RUNOFF VOLUME (mm)= 34.03 9.84  
 TOTAL RAINFALL (mm)= 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.25

\*TOTALS\*  
 0.847 (iii)

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):	214.34	1.884	3.17	14.16
+ ID2= 2 ( 5042):	7.70	0.847	3.00	25.56
ID = 3 ( 0106):	222.04	2.398	3.00	14.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5212)  
 ID= 1 DT= 5.0 min

Area (ha)= 15.70  
 Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	11.78	3.93
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	323.52	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 29.70  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.26 (ii) 20.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

PEAK FLOW (cms)= 1.64 0.16  
 TIME TO PEAK (hrs)= 3.00 3.33  
 RUNOFF VOLUME (mm)= 34.03 12.97  
 TOTAL RAINFALL (mm)= 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.32

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 0114)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):	222.04	2.398	3.00	14.56
+ ID2= 2 ( 5212):	15.70	1.726	3.00	26.87
ID = 3 ( 0114):	237.74	4.124	3.00	15.37

2.07 81.09 .128E+05 43.8 0.59 4.86  
 2.19 81.21 .155E+05 40.6 0.45 6.35

<--- hydrograph ---> <--- pipe / channel --->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0114)	237.74	4.12	3.00	15.37	0.44	0.38
OUTFLOW: ID= 1 ( 0505)	237.74	3.51	3.08	15.37	0.40	0.36

CALIB  
 STANDHYD ( 5052)  
 ID= 1 DT= 5.0 min

Area (ha)= 15.90  
 Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS (ha)	PERVIOUS (i) (mm)
Surface Area	11.77	4.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	325.58	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 17.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2 ---> OUT= 1

Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83

over (min) 5.00 25.00  
 Storage Coeff. (min)= 6.28 (ii) 23.60 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*

PEAK FLOW (cms)= 1.64 0.11 1.692 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 9.46 25.43  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.24 0.64

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0108)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0505):	237.74	3.511	3.08	15.37
+ ID2= 2 ( 5052):	15.90	1.692	3.00	25.43
ID = 3 ( 0108):	253.64	4.968	3.00	16.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	

Mannings n = 0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 21.58  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 5.73 (ii) 21.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.20 0.05

\*TOTALS\*

PEAK FLOW (cms)= 1.22 0.10 1.272 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.86 25.92  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.27 0.65

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0110)

236.47 80.40 0.0900  
 277.80 80.48 0.0900  
 305.35 80.37 0.0900  
 346.67 80.41 0.0900  
 387.99 80.33 0.0900  
 415.54 80.53 0.0900  
 447.88 80.49 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<--- hydrograph ---> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0108)	253.64	4.97	3.00	16.00	1.25	1.14
OUTFLOW: ID= 1 ( 0506)	253.64	4.63	3.08	16.00	1.22	1.13

CALIB  
 STANDHYD ( 5062) | Area (ha)= 11.70  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 8.78 2.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 279.28 40.00

1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.64	4.632	3.08	16.00
+ ID2= 2 ( 5062):	11.70	1.272	3.00	25.92
ID = 3 ( 0110):	265.34	5.450	3.00	16.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5102) | Area (ha)= 1.70  
 ID= 1 DT= 5.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.09 0.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 106.46 40.00  
 Mannings n = 0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.27  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 3.21 (ii) 21.18 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00

Unit Hyd. peak (cms)= 0.27 0.05

PEAK FLOW (cms)= 0.15 0.02 \*TOTALS\* 0.158 (iii)

TIME TO PEAK (hrs)= 3.00 3.33 3.00

RUNOFF VOLUME (mm)= 34.03 8.76 21.90

TOTAL RAINFALL (mm)= 40.03 40.03 40.03

RUNOFF COEFFICIENT = 0.85 0.22 0.55

1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511) |  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88

1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 20.16

over (min) = 5.00 25.00

Storage Coeff. (min)= 3.81 (ii) 20.30 (ii)

Unit Hyd. Tpeak (min)= 5.00 25.00

Unit Hyd. peak (cms)= 0.25 0.05

PEAK FLOW (cms)= 0.29 0.03 \*TOTALS\* 0.307 (iii)

TIME TO PEAK (hrs)= 3.00 3.33 3.00

RUNOFF VOLUME (mm)= 34.03 10.52 24.15

TOTAL RAINFALL (mm)= 40.03 40.03 40.03

RUNOFF COEFFICIENT = 0.85 0.26 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117) |

AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0511):	1.70	0.117	3.00 21.89
+ ID2= 2 ( 5112):	3.00	0.307	3.00 24.15
ID = 3 ( 0117):	4.70	0.424	3.00 23.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) |

IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	

<---- hydrograph ----> <-pipe / channel-->

AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 5102)	1.70	0.16	3.00	21.90	0.03 0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.12	3.00	21.89	0.02 0.24

CALIB |

STANDHYD ( 5112) | Area (ha)= 3.00

ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.07 0.93
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	141.42 40.00
Mannings n =	0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59

175.64	80.72	0.0900
192.09	80.85	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ----> <-pipe / channel-->

AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0117)	4.70	0.42	3.00	23.33	0.59 0.38
OUTFLOW: ID= 1 ( 0512)	4.70	0.23	3.00	23.27	0.47 0.33

CALIB |

STANDHYD ( 5122) | Area (ha)= 3.90

ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.65 1.25
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	161.25 40.00
Mannings n =	0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.82  
over (min) 5.00 25.00  
Storage Coeff. (min)= 4.12 (ii) 20.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

PEAK FLOW (cms)= 0.37 0.04 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.33 0.390 (iii)  
RUNOFF VOLUME (mm)= 34.03 10.44 23.88  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.26 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0512):	4.70	0.234	3.08	23.27
+ ID2= 2 ( 5122):	3.90	0.390	3.00	23.88

PEAK FLOW (cms)= 0.275 (i)  
TIME TO PEAK (hrs)= 3.917  
RUNOFF VOLUME (mm)= 5.466  
TOTAL RAINFALL (mm)= 40.032  
RUNOFF COEFFICIENT = 0.137

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

STANDHYD ( 6012)	Area (ha)= 11.00	Dir. Conn.(%)= 16.00
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.08	7.92
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	270.00	40.00
Mannings n =	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.91  
over (min) 5.00 30.00  
Storage Coeff. (min)= 5.63 (ii) 28.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00

ID = 3 ( 0119): 8.60 0.606 3.00 23.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0110):	265.34	5.450	3.00	16.44
+ ID2= 2 ( 0119):	8.60	0.606	3.00	23.55
ID = 3 ( 0120):	273.94	6.056	3.00	16.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

NASHYD ( 6011)	Area (ha)= 44.10	Curve Number (CN)= 62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.83	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 2.027

Unit Hyd. peak (cms)= 0.20 0.04 \*TOTALS\*  
PEAK FLOW (cms)= 0.28 0.11 0.323 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 6.61 10.99  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.17 0.27

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6011):	44.10	0.275	3.92	5.47
+ ID2= 2 ( 6012):	11.00	0.323	3.00	10.99
ID = 3 ( 0124):	55.10	0.372	3.75	6.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

NASHYD ( 6021)	Area (ha)= 43.60	Curve Number (CN)= 62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.95	

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59

0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.247 (i)  
 TIME TO PEAK (hrs)= 4.083  
 RUNOFF VOLUME (mm)= 5.466  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.137

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) | Area (ha)= 12.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)	4.51		8.38
Dep. Storage (mm)	6.00		8.00
Average Slope (%)	1.00		1.00
Length (m)	293.26		40.00
Mannings n	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2----> OUT= 1 | Routing time step (min)= 5.00

----- DATA FOR SECTION (2135.9) -----			
Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

----- TRAVEL TIME TABLE -----					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 9.23  
 over (min) = 5.00 30.00  
 Storage Coeff. (min)= 5.90 (ii) 28.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.19 0.04

PEAK FLOW (cms)= 0.48 0.12 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.42 0.519 (iii)  
 RUNOFF VOLUME (mm)= 34.03 6.72 13.00  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.32

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0121): 43.60 0.247 4.08 5.47  
 + ID2= 2 ( 0122): 12.90 0.519 3.00 13.00  
 ID = 3 ( 0125): 56.50 0.549 3.00 7.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0124): 55.10 0.372 3.75 6.57  
 + ID2= 2 ( 0125): 56.50 0.549 3.00 7.19  
 ID = 3 ( 0126): 111.60 0.915 3.00 6.88

2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

hydrograph ----> <--pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0126) 111.60 0.92 3.00 6.88 0.52 0.20  
 OUTFLOW: ID= 1 ( 0603) 111.60 0.52 4.83 6.88 0.48 0.20

CALIB  
 NASHYD ( 0613) | Area (ha)= 1.77 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.22

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.032 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 6.291  
 TOTAL RAINFALL (mm)= 40.032  
 RUNOFF COEFFICIENT = 0.157

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 6222) Area (ha)= 2.02  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.58 0.44  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 116.05 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---  
Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time from 0.083 to 1.500 hours.

Max.Eff.Inten.(mm/hr)= 61.93 8.35  
over (min)= 5.00 30.00  
Storage Coeff. (min)= 3.38 (ii) 26.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.26 0.04  
\*TOTALS\*  
PEAK FLOW (cms)= 0.27 0.01 0.268 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 7.24 28.13

over (min)= 5.00 20.00  
Storage Coeff. (min)= 3.09 (ii) 19.05 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.27 0.06  
\*TOTALS\*  
PEAK FLOW (cms)= 0.13 0.02 0.138 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 34.03 9.66 21.84  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.24 0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0615) Area (ha)= 2.14  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.67 0.47  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 119.44 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---  
Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time from 0.083 to 1.000 hours.

TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.18 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0614) Area (ha)= 1.50  
ID= 1 DT= 5.0 min Total Imp(%)= 69.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.04 0.47  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 100.00 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---  
Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time from 0.083 to 1.500 hours.

Max.Eff.Inten.(mm/hr)= 61.93 21.90

1.003 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59  
1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59  
1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59  
1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59  
1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 8.35  
over (min)= 5.00 30.00  
Storage Coeff. (min)= 3.44 (ii) 26.90 (ii)  
Unit Hyd. Tpeak (min)= 5.00 30.00  
Unit Hyd. peak (cms)= 0.26 0.04  
\*TOTALS\*

PEAK FLOW (cms)= 0.28 0.01 0.284 (iii)  
TIME TO PEAK (hrs)= 3.00 3.42 3.00  
RUNOFF VOLUME (mm)= 34.03 7.24 28.13  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.18 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0618) Area (ha)= 1.49  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.16 0.33  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 99.67 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---  
Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time from 0.083 to 0.333 hours.



0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 49.00  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.09 (ii) 14.65 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08

PEAK FLOW (cms)= 0.13 0.03  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 34.03 13.07  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.33

\*TOTALS\*  
0.149 (iii)  
3.00  
23.54  
40.03  
0.59

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6302) Area (ha)= 0.86  
ID= 1 DT= 5.0 min Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	0.81	0.05
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	75.72	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 11.27  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.62 (ii) 6.12 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.15

PEAK FLOW (cms)= 0.14 0.00  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 34.03 5.67  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.14

\*TOTALS\*  
0.139 (iii)  
3.00  
32.33  
40.03  
0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0617) Area (ha)= 2.31  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	1.80	0.51
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	124.10	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 70.42  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.52 (ii) 13.52 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.08

PEAK FLOW (cms)= 0.19 0.06  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 34.03 15.68  
TOTAL RAINFALL (mm)= 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.39

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0290)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0614):	1.50	0.138	3.00	21.84
+ ID2= 2 ( 0615):	2.14	0.284	3.00	28.13
=====				
ID = 3 ( 0290):	3.64	0.423	3.00	25.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	3.64	0.423	3.00	25.54
+ ID2= 2 ( 0617):	2.31	0.241	3.00	24.85
=====				
ID = 1 ( 0290):	5.95	0.663	3.00	25.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	5.95	0.663	3.00	25.27
+ ID2= 2 ( 0618):	1.49	0.149	3.00	23.54
=====				
ID = 3 ( 0290):	7.44	0.813	3.00	24.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	7.44	0.813	3.00	24.93
+ ID2= 2 ( 6222):	2.02	0.268	3.00	28.13
=====				
ID = 1 ( 0290):	9.46	1.081	3.00	25.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0290):	9.46	1.081	3.00	25.61
+ ID2= 2 ( 6302):	0.86	0.139	3.00	32.33
-----				
ID = 3 ( 0290):	10.32	1.220	3.00	26.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6212)	1.15	65.00	65.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.75	0.40
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	87.56	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 5.71

over (min)	5.00	35.00	
Storage Coeff. (min)=	2.86 (ii)	30.16 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.28	0.04	
*TOTALS*			
PEAK FLOW (cms)=	0.13	0.00	0.128 (iii)
TIME TO PEAK (hrs)=	3.00	3.50	3.00
RUNOFF VOLUME (mm)=	34.03	5.67	24.09
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.14	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6232)	0.85	65.00	65.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.55	0.30
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	75.28	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.36  
over (min) 5.00 25.00  
Storage Coeff. (min)= 2.71 (ii) 21.59 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)=	0.10	0.01	0.102 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	10.28	24.52
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.26	0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0288)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6212):	1.15	0.128	3.00	24.09
+ ID2= 2 ( 6232):	0.85	0.095	3.00	24.08
-----				
ID = 3 ( 0288):	2.00	0.224	3.00	24.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0626)	0.96	60.00	60.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.58	0.38
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	80.00	40.00

ADD HYD ( 0297)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 0288):	2.00	0.224	3.00	24.09
+ ID2= 2 ( 0290):	10.32	1.220	3.00	26.17
-----				
ID = 3 ( 0297):	12.32	1.444	3.00	25.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
3 + 2 = 1				
ID1= 3 ( 0297):	12.32	1.444	3.00	25.83
+ ID2= 2 ( 0613):	1.77	0.032	3.00	6.29
-----				
ID = 1 ( 0297):	14.09	1.469	3.00	23.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 0297):	14.09	1.469	3.00	23.38
+ ID2= 2 ( 0626):	0.96	0.102	3.00	24.52
-----				
ID = 3 ( 0297):	15.05	1.572	3.00	23.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0302)				
OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.1070	0.3146
	0.0150	0.1715	0.7100	0.8031
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0297)	15.050	1.572	3.00	23.45
OUTFLOW: ID= 1 ( 0302)	15.050	0.083	5.08	23.26

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.28  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.2775

CALIB		
STANDHYD ( 6202)		
ID= 1 DT= 5.0 min	Area (ha)=	1.26
	Total Imp(%)=	94.00
	Dir. Conn.(%)=	94.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area	(ha)=	1.18			0.08
Dep. Storage	(mm)=	6.00			8.00
Average Slope	(%)=	1.00			1.00
Length	(m)=	91.65			40.00
Mannings n	=	0.013			0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	11.27
over (min)	5.00	10.00
Storage Coeff. (min)=	2.94 (ii)	6.44 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00
Unit Hyd. peak (cms)=	0.28	0.14

PEAK FLOW (cms)=	0.20	0.00	0.203 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	34.03	5.67	32.33
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.14	0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0292)				
OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
	0.0000	0.0000	0.0580	0.0848
	0.0090	0.0366	0.0000	0.0000
-----				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 6202)	1.260	0.203	3.00	32.33
OUTFLOW: ID= 1 ( 0292)	1.260	0.008	5.08	31.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.95  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0327

CALIB		
STANDHYD ( 0606)		
ID= 1 DT= 5.0 min	Area (ha)=	1.98
	Total Imp(%)=	65.00
	Dir. Conn.(%)=	65.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area	(ha)=	1.29			0.69
Dep. Storage	(mm)=	6.00			8.00
Average Slope	(%)=	1.00			1.00
Length	(m)=	114.89			40.00
Mannings n	=	0.013			0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38

0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	5.71
over (min)	5.00	35.00
Storage Coeff. (min)=	3.36 (ii)	30.67 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.26	0.04

PEAK FLOW (cms)=	0.22	0.01	0.220 (iii)
TIME TO PEAK (hrs)=	3.00	3.50	3.00
RUNOFF VOLUME (mm)=	34.03	5.67	24.10
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.14	0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0612)		
ID= 1 DT= 5.0 min	Area (ha)=	2.18
	Total Imp(%)=	94.00
	Dir. Conn.(%)=	94.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area	(ha)=	2.05			0.13
Dep. Storage	(mm)=	6.00			8.00
Average Slope	(%)=	1.00			1.00
Length	(m)=	120.55			40.00
Mannings n	=	0.013			0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

0.0159 0.0631 | 0.0000 0.0000

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

INFLOW : ID= 2 ( 0612) 2.180 0.349 3.00 32.33

OUTFLOW: ID= 1 ( 0295) 2.180 0.014 5.08 31.87

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.07

TIME SHIFT OF PEAK FLOW (min)=125.00

MAXIMUM STORAGE USED (ha.m.)= 0.0564

ADD HYD ( 0306)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0292):	1.26	0.008	5.08	31.51
+ ID2= 2 ( 0295):	2.18	0.014	5.08	31.87
ID = 3 ( 0306):	3.44	0.022	5.08	31.74

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0306)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0306):	3.44	0.022	5.08	31.74
+ ID2= 2 ( 0606):	1.98	0.220	3.00	24.10
ID = 1 ( 0306):	5.42	0.235	3.00	28.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0304)

IN= 2----> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION (2135.9) -----

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	

Max.Eff.Inten.(mm/hr)= 61.93 11.27

over (min) 5.00 10.00

Storage Coeff. (min)= 3.46 (ii) 6.96 (ii)

Unit Hyd. Tpeak (min)= 5.00 10.00

Unit Hyd. peak (cms)= 0.26 0.14

\*TOTALS\*

PEAK FLOW (cms)= 0.35 0.00 0.349 (iii)

TIME TO PEAK (hrs)= 3.00 3.08 3.00

RUNOFF VOLUME (mm)= 34.03 5.67 32.33

TOTAL RAINFALL (mm)= 40.03 40.03 40.03

RUNOFF COEFFICIENT = 0.85 0.14 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0295) OVERFLOW IS OFF

IN= 2----> OUT= 1

DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464

187.47 91.00 0.0700

203.83 91.00 0.0700

306.44 92.00 0.0700

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

hydrograph

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW : ID= 2 ( 0306)	5.42	0.23	3.00	28.95	0.14	0.53
OUTFLOW: ID= 1 ( 0304)	5.42	0.10	3.08	28.94	0.10	0.46

CALIB

STANDHYD ( 0616) Area (ha)= 0.44

ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 0.34 0.10

Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00

Length (m)= 54.16 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.36

over (min) 5.00 25.00

Storage Coeff. (min)= 2.14 (ii) 21.03 (ii)

Unit Hyd. Tpeak (min)= 5.00 25.00

Unit Hyd. peak (cms)= 0.31 0.05

\*TOTALS\*

PEAK FLOW (cms)= 0.06 0.00 0.060 (iii)

TIME TO PEAK (hrs)= 3.00 3.33 3.00

RUNOFF VOLUME (mm)= 34.03 10.28 28.78

TOTAL RAINFALL (mm)= 40.03 40.03 40.03

RUNOFF COEFFICIENT = 0.85 0.26 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102) Area (ha)= 2.49

ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.94 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 128.84 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 91.31  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.60 (ii) 12.61 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.08  
 PEAK FLOW (cms)= 0.21 0.08 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.00 0.279 (iii)  
 RUNOFF VOLUME (mm)= 34.03 20.31 27.17  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.51 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.3 Ia = Dep. 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 ( 0624) Area (ha)= 0.89  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.69 0.20  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 77.03 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 14.36  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.65 (ii) 21.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.12 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.28 28.79  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0619) Area (ha)= 1.64  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.07 0.57  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 104.56 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 17.42  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 3.18 (ii) 20.66 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.27 0.05

PEAK FLOW (cms)= 0.18 0.02 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 12.21 26.39  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.30 0.66

ADD HYD ( 0286)

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6102):	2.49	0.279	3.00	27.17
+ ID2= 2 ( 0616):	0.44	0.060	3.00	28.78
ID = 3 ( 0286):	2.93	0.339	3.00	27.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0286):	2.93	0.339	3.00	27.41
+ ID2= 2 ( 0624):	0.89	0.121	3.00	28.79
ID = 1 ( 0286):	3.82	0.459	3.00	27.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0305) OVERFLOW IS OFF

IN= 2 ---> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
		0.0000	0.0000	0.1760	0.2330
		0.0280	0.0927	0.0000	0.0000

INFLOW : ID= 2 ( 0286) AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 3.820 0.459 3.00 27.73  
 OUTFLOW: ID= 1 ( 0305) 3.820 0.025 5.08 27.51

PEAK FLOW REDUCTION [Qout/Qin](%)= 5.35  
 TIME SHIFT OF PEAK FLOW (min)=125.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0814

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0302):	15.05	0.083	5.08	23.26
+ ID2= 2 ( 0304):	5.42	0.103	3.08	28.94
=====				
ID = 3 ( 0293):	20.47	0.144	3.50	24.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0293):	20.47	0.144	3.50	24.76
+ ID2= 2 ( 0305):	3.82	0.025	5.08	27.51
=====				
ID = 1 ( 0293):	24.29	0.167	3.58	25.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	24.29	0.167	3.58	25.19
+ ID2= 2 ( 0619):	1.64	0.188	3.00	26.39
=====				
ID = 3 ( 0293):	25.93	0.313	3.00	25.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 6032)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		29.63	47.00	32.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	13.93	15.70
Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	444.45	40.00
Mannings n =	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	18.66	
over (min)	10.00	25.00	
Storage Coeff. (min)=	7.57 (ii)	24.58 (ii)	
Unit Hyd. Tpeak (min)=	10.00	25.00	
Unit Hyd. peak (cms)=	0.13	0.05	
PEAK FLOW (cms)=	1.35	0.43	*TOTALS*
TIME TO PEAK (hrs)=	3.00	3.33	1.556 (iii)
RUNOFF VOLUME (mm)=	38.53	10.31	19.34
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.96	0.26	0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	25.93	0.313	3.00	25.27
+ ID2= 2 ( 0603):	111.60	0.522	4.83	6.88
=====				
ID = 3 ( 0128):	137.53	0.682	4.83	10.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	137.53	0.682	4.83	10.35
+ ID2= 2 ( 6032):	29.63	1.556	3.00	19.34
=====				
ID = 1 ( 0128):	167.16	2.043	3.00	11.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)	Routing time step (min)=
ID= 2--> OUT= 1	5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	

296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0128)	167.16	2.04	3.00	11.94	1.86	0.09
OUTFLOW: ID= 1 ( 0604)	167.16	0.75	3.58	11.93	1.47	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB	STANDHYD ( 6042)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
ID= 1 DT= 5.0 min		24.00	78.00	69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	18.72	5.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	400.00	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 34.27  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 7.11 (ii) 20.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.17 0.05

\*TOTALS\*

PEAK FLOW (cms)= 2.57 0.25 2.697 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 34.03 14.35 27.93  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.36 0.70

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 0130)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0604):	167.16	0.751	3.58	11.93

1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0130)	191.16	3.31	3.00	13.94	0.91	0.30
OUTFLOW: ID= 1 ( 0605)	191.16	1.28	3.50	13.94	0.77	0.25

CALIB  
 STANDHYD ( 6112)  
 ID= 1 DT= 5.0 min

Area (ha)= 11.40  
 Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

	IMPERVIOUS	PERVIOUS (i)
	(ha)	(mm)
Surface Area	8.21	3.19
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	275.68	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59

+ ID2= 2 ( 6042): 24.00 2.697 3.00 27.93  
 ID= 3 ( 0130): 191.16 3.313 3.00 13.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

DATA FOR SECTION ( 801.4 )

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

TRAVEL TIME TABLE

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.27	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37

1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 27.44  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 5.69 (ii) 20.26 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.20 0.05

\*TOTALS\*

PEAK FLOW (cms)= 1.14 0.12 1.199 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 12.07 25.69  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.30 0.64

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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 ( 0139)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0605):	191.16	1.280	3.50	13.94
+ ID2= 2 ( 6112):	11.40	1.199	3.00	25.69
ID= 3 ( 0139):	202.56	2.192	3.00	14.60

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6052)  
 ID= 1 DT= 5.0 min

Area (ha)= 15.90  
 Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
	(ha)	(mm)
Surface Area	11.77	4.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	325.58	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 16.60  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 6.28 (ii) 24.10 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.19 0.05

\*TOTALS\*  
PEAK FLOW (cms)= 1.64 0.10 1.688 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 8.85 25.22  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.22 0.63

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0139):	202.56	2.192	3.00	14.60
+ ID2= 2 ( 6052):	15.90	1.688	3.00	25.22
ID = 3 ( 0132):	218.46	3.880	3.00	15.37

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
2.93 81.56 .841E+05	215.0	1.13	6.52		
3.10 81.72 .970E+05	256.7	1.18	6.30		
INFLOW : ID= 2 ( 0132)	218.46	3.88	3.00	0.54	0.59
OUTFLOW: ID= 1 ( 0530)	218.46	2.86	3.08	0.47	0.54

CALIB  
STANDHYD ( 5302)  
ID= 1 DT= 5.0 min

Area (ha)= 5.80  
Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.83 1.97  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 196.64 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 / 0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72

over (min) = 5.00 25.00  
Storage Coeff. (min)= 4.64 (ii) 23.08 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.22 0.05

\*TOTALS\*  
PEAK FLOW (cms)= 0.54 0.05 0.558 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 34.03 8.49 22.79  
TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
RUNOFF COEFFICIENT = 0.85 0.21 0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0530):	218.46	2.856	3.08	15.37
+ ID2= 2 ( 5302):	5.80	0.558	3.00	22.79
ID = 3 ( 0134):	224.26	3.121	3.08	15.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0120):	273.94	6.056	3.00	16.66
+ ID2= 2 ( 0134):	224.26	3.121	3.08	15.57
ID = 3 ( 0135):	498.20	9.169	3.00	16.17

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 / 0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100



0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

CALIB  
STANDHYD ( 5072) Area (ha)= 48.90  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	24.45	24.45
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	570.96	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

		hydrograph			pipe / channel	
INFLOW : ID= 2 ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
OUTFLOW: ID= 1 ( 0507)	498.20	9.17	3.00	16.17	1.56	0.75
	498.20	6.43	3.25	16.17	1.35	0.68

----- TRANSFORMED HYETOGRAPH -----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	20.04	
over (min)	10.00	30.00	
Storage Coeff. (min)=	8.80 (ii)	25.33 (ii)	
Unit Hyd. Tpeak (min)=	10.00	30.00	
Unit Hyd. peak (cms)=	0.12	0.04	
*TOTALS*			
PEAK FLOW (cms)=	2.41	0.69	2.677 (iii)
TIME TO PEAK (hrs)=	3.00	3.42	3.00
RUNOFF VOLUME (mm)=	34.03	11.03	19.31
TOTAL RAINFALL (mm)=	40.03	40.03	40.03

RUNOFF COEFFICIENT = 0.85 0.28 0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0507):	498.20	6.428	3.25	16.17
+ ID2= 2 ( 5072):	48.90	2.677	3.00	19.31
ID = 3 ( 0122):	547.10	8.314	3.08	16.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5402) Area (ha)= 9.40  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

		IMPERVIOUS	PERVIOUS (i)
Surface Area	(ha)=	4.70	4.70
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	250.33	40.00
Mannings n	=	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)=	61.93	15.40	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.37 (ii)	23.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
*TOTALS*			
PEAK FLOW (cms)=	0.53	0.11	0.585 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	8.53	17.45
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.21	0.44

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STORE HYD( 1505) AREA (ha)= 30.00  
ID= 1 DT= 5.0min QPEAK (cms)= 0.78  
TPEAK (hrs)= 15.58  
VOLUME (mm)= 402.14

TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25



Table with 10 columns of numerical data, likely representing flow rates or volumes over time.

Table with 10 columns of numerical data, continuing the sequence of flow rates or volumes.

Table with 10 columns of numerical data, showing a continuation of the flow data.

Table with 10 columns of numerical data, including summary statistics like area and volume.

Table with 10 columns of numerical data, including summary statistics like area and volume, and a sub-table of flow data.

Table with 10 columns of numerical data, ranging from 2.33 to 6.42 in the first column and 0.00 to 0.14 in the second column.

Table with 10 columns of numerical data, ranging from 6.50 to 10.58 in the first column and 0.00 to 0.16 in the second column.

Table with 10 columns of numerical data, ranging from 10.67 to 14.75 in the first column and 0.00 to 0.99 in the second column.

Table with 10 columns of numerical data, ranging from 14.83 to 18.92 in the first column and 0.99 to 0.83 in the second column.



TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	3.68	1.50	9.19	3.00	20.22	4.50	5.51
0.17	3.68	1.67	9.19	3.17	20.22	4.67	5.51
0.33	3.68	1.83	9.19	3.33	20.22	4.83	5.51
0.50	5.51	2.00	11.03	3.50	9.19	5.00	3.68
0.67	5.51	2.17	11.03	3.67	9.19	5.17	3.68
0.83	5.51	2.33	11.03	3.83	9.19	5.33	3.68
1.00	5.51	2.50	55.14	4.00	7.35	5.50	3.68
1.17	5.51	2.67	99.25	4.17	7.35	5.67	3.68
1.33	5.51	2.83	143.36	4.33	7.35	5.83	3.68

RUNOFF VOLUME (mm)= 31.899  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.347

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)= 37.32	Curve Number (CN)= 65.0
STANDHYD ( 5012)	Total Imp(%)= 38.00	Dir. Conn.(%)= 24.00
ID= 1 DT= 5.0 min		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.18	23.14
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	498.80	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB	Area (ha)= 80.20	Curve Number (CN)= 65.0
NASHYD ( 5011)	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.85	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36 over (min)= 5.00  
Storage Coeff. (min)= 5.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.20

\*TOTALS\*

Unit Hyd Qpeak (cms)= 3.621  
PEAK FLOW (cms)= 3.123 (i)  
TIME TO PEAK (hrs)= 3.833

PEAK FLOW (cms)= 3.33 3.12 5.902 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 37.01 48.74  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.40 0.53

187.19 88.84 0.1100  
211.21 88.88 0.1100

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.494E+04	4.5	0.93	21.56
1.21	88.05	.150E+05	7.1	0.96	20.43
1.33	88.17	.233E+05	10.6	0.94	19.49
1.44	88.28	.346E+05	15.5	0.93	18.71
1.56	88.40	.484E+05	22.8	0.91	18.05
1.67	88.51	.634E+05	32.1	0.88	17.53
1.79	88.63	.807E+05	41.2	0.84	17.11
1.90	88.74	.101E+06	54.6	0.80	16.77
2.02	88.86	.124E+06	64.7	0.76	16.50

ADD HYD ( 0100)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5011):	80.20	3.123	3.83	31.90
+ ID2= 2 ( 5012):	37.32	5.902	3.00	48.74
ID = 3 ( 0100):	117.52	6.639	3.00	37.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0502)  
IN= 2--> OUT= 1 Routing time step (min)= 5.00

DATA FOR SECTION (1537.5) -----

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	
155.81	88.53	0.1100	
183.05	88.85	0.1100	

hydrograph <--> <-pipe / channel-->  
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
INFLOW : ID= 2 ( 0100) 117.52 6.64 3.00 37.25 1.20 0.57  
OUTFLOW: ID= 1 ( 0502) 117.52 4.27 3.92 37.24 1.09 0.65

CALIB	Area (ha)= 2.30	Curve Number (CN)= 69.3
NASHYD ( 5691)	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.07	

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51

0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.420 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 32.950  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.359

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 NASHYD ( 5021) Area (ha)= 3.67 Curve Number (CN)= 68.8  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.43

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68

1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 over (min) 5.00  
 Storage Coeff. (min)= 2.31 (ii) 11.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.30  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.35 0.15 0.475 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 50.07 68.19  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.54 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5082) Area (ha)= 0.71  
 ID= 1 DT= 5.0 min Total Imp(%)= 73.00 Dir. Conn.(%)= 64.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.52 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 68.80 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51

1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.261 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 35.402  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.385

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5092) Area (ha)= 1.73  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.60 Dir. Conn.(%)= 50.60

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.88 0.85  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 107.39 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68

0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 over (min) 5.00  
 Storage Coeff. (min)= 1.77 (ii) 10.54 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.32 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.18 0.03 0.208 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 37.04 68.30  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.40 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.7 Ia = Dep. 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 ( 5682) Area (ha)= 0.53  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 59.44 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 52.83  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.62 (ii) 12.83 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.32 0.08

PEAK FLOW (cms)= 0.14 0.02 0.152 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 31.47 66.83  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.34 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		STANDHYD ( 0501)	
Area (ha)=	6.23	Total Imp(%)=	42.00
Dir. Conn.(%)=			
IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	2.62	3.61	

Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 203.80 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 44.23  
over (min) 5.00 20.00  
Storage Coeff. (min)= 3.39 (ii) 15.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.07

PEAK FLOW (cms)= 1.02 0.26 1.202 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 85.90 26.58 51.49  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.29 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 0510)	
Area (ha)=	0.76	Total Imp(%)=	78.00
Dir. Conn.(%)=			
IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.59	0.17	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	71.18	40.00	
Mannings n	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.05  
over (min) 5.00 10.00  
Storage Coeff. (min)= 1.80 (ii) 6.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.15

PEAK FLOW (cms)= 0.24 0.04 0.273 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 50.07 78.01  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.54 0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5752)	
Area (ha)=	0.78	Total Imp(%)=	65.00
Dir. Conn.(%)=			
IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.51	0.27	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	72.11	40.00	
Mannings n	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 87.27  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.82 (ii) 10.99 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00



Unit Hyd. peak (cms)= 0.32 0.09

PEAK FLOW (cms)= 0.20 0.04

TIME TO PEAK (hrs)= 3.00 3.00

RUNOFF VOLUME (mm)= 85.90 43.54 71.07

TOTAL RAINFALL (mm)= 91.90 91.90 91.90

RUNOFF COEFFICIENT = 0.93 0.47 0.77

\*TOTALS\*

0.236 (iii)

1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.86

over (min) = 5.00 15.00

Storage Coeff. (min)= 2.44 (ii) 11.10 (ii)

Unit Hyd. Tpeak (min)= 5.00 15.00

Unit Hyd. peak (cms)= 0.30 0.09

PEAK FLOW (cms)= 0.54 0.13

TIME TO PEAK (hrs)= 3.00 3.00

RUNOFF VOLUME (mm)= 85.90 50.50 73.51

TOTAL RAINFALL (mm)= 91.90 91.90 91.90

RUNOFF COEFFICIENT = 0.93 0.55 0.80

\*TOTALS\*

0.645 (iii)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.6 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 5282)  
ID= 1 DT= 5.0 min

Area (ha)= 2.08  
Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.35 0.73

Dep. Storage (mm)= 6.00 8.00

Average Slope (%)= 1.00 1.00

Length (m)= 117.76 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68

ADD HYD ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0501):	6.23	1.202	3.00	51.49
+ ID2= 2 ( 5021):	3.67	0.261	3.33	35.40
ID = 3 ( 0481):	9.90	1.346	3.00	45.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0481):	9.90	1.346	3.00	45.53
+ ID2= 2 ( 5082):	0.71	0.208	3.00	68.30
ID = 1 ( 0481):	10.61	1.554	3.00	47.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0481):	10.61	1.554	3.00	47.05
+ ID2= 2 ( 5092):	1.73	0.475	3.00	68.19
ID = 3 ( 0481):	12.34	2.029	3.00	50.02

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0481):	12.34	2.029	3.00	50.02
+ ID2= 2 ( 0510):	0.76	0.273	3.00	78.01
ID = 1 ( 0481):	13.10	2.302	3.00	51.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0481):	13.10	2.302	3.00	51.64
+ ID2= 2 ( 5282):	2.08	0.645	3.00	73.51
ID = 3 ( 0481):	15.18	2.947	3.00	54.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0481):	15.18	2.947	3.00	54.64
+ ID2= 2 ( 5682):	0.53	0.152	3.00	66.83
ID = 1 ( 0481):	15.71	3.099	3.00	55.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)

1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0481):	15.71	3.099	3.00	55.05
+ ID2= 2 ( 5691):	2.30	0.420	3.00	32.95
ID = 3 ( 0481):	18.01	3.519	3.00	52.23

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 3 ( 0481):	18.01	3.519	3.00	52.23
+ ID2= 2 ( 5752):	0.78	0.236	3.00	71.07
ID = 1 ( 0481):	18.79	3.755	3.00	53.01

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
NASHYD ( 0524)  
ID= 1 DT= 5.0 min

Area (ha)= 7.22 Curve Number (CN)= 80.7

Ia (mm)= 8.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.20

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68

1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 1.222 (i)  
TIME TO PEAK (hrs)= 3.083  
RUNOFF VOLUME (mm)= 48.516  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.528

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0522) | Area (ha)= 3.31 Curve Number (CN)= 63.1  
ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.16

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.373 (i)  
TIME TO PEAK (hrs)= 3.000  
RUNOFF VOLUME (mm)= 30.116  
TOTAL RAINFALL (mm)= 91.900

RUNOFF COEFFICIENT = 0.328

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0580) | Area (ha)= 1.87  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.22 0.65  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 111.65 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Max.Eff.Inten.(mm/hr)= 143.36 52.83  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 2.36 (ii) 13.58 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.08  
PEAK FLOW (cms)= 0.48 0.06 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.533 (iii) 3.00

RUNOFF VOLUME (mm)= 85.90 31.47 66.85  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.34 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0519) | Area (ha)= 2.08  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

Max.Eff.Inten.(mm/hr)= 143.36 50.65  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 2.44 (ii) 13.85 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.30 0.08

PEAK FLOW (cms)= 0.54 0.07 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.08 0.590 (iii) 3.00  
RUNOFF VOLUME (mm)= 85.90 30.24 66.41  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.33 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.40 0.40  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 109.54 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show transformed hyetograph data for various time intervals.

1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 60.35  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.34 (ii) 6.87 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.14

\*TOTALS\*  
 PEAK FLOW (cms)= 0.56 0.05 0.607 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 30.24 73.65  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0267)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0519):	2.08	0.590	3.00	66.41
+ ID2= 2 ( 0529):	1.80	0.607	3.00	73.65
-----				
ID = 3 ( 0267):	3.88	1.197	3.00	69.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0267)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0267):	3.88	1.197	3.00	69.77
+ ID2= 2 ( 0580):	1.87	0.533	3.00	66.85
-----				
ID = 1 ( 0267):	5.75	1.730	3.00	68.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0265)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0267):	5.75	1.730	3.00	68.82
+ ID2= 2 ( 0522):	3.31	0.373	3.00	30.12
-----				
ID = 3 ( 0265):	9.06	2.103	3.00	54.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0523)			
ID= 1 DT= 5.0 min			
Area (ha)=	6.61		
Total Imp(%)=	75.00	Dir. Conn.(%)=	50.00

			IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	4.96				1.65	
Dep. Storage (mm)=	6.00				8.00	
Average Slope (%)=	1.00				1.00	
Length (m)=	209.92				40.00	
Mannings n =	0.013				0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68

1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68
-------	------	-------	--------	-------	------	------	------

Max.Eff.Inten.(mm/hr)= 143.36 185.04  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.45 (ii) 10.24 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.29 0.55 1.766 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 47.59 66.75  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.52 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0260)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0265):	9.06	2.103	3.00	54.68
+ ID2= 2 ( 0523):	6.61	1.766	3.00	66.75
-----				
ID = 3 ( 0260):	15.67	3.869	3.00	59.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0525)			
ID= 1 DT= 5.0 min			
Area (ha)=	1.45		
Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00

			IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	0.94				0.51	
Dep. Storage (mm)=	6.00				8.00	
Average Slope (%)=	1.00				1.00	
Length (m)=	98.32				40.00	
Mannings n =	0.013				0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 86.21  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.19 (ii) 11.41 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.37 0.07 0.436 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 43.01 70.88  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.47 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0272)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0260):	15.67	3.869	3.00	59.77
+ ID2= 2 ( 0525):	1.45	0.436	3.00	70.88

=====  
 ID = 3 ( 0272): 17.12 4.306 3.00 60.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0264) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0272): 17.12 4.306 3.00 60.71  
 + ID2= 2 ( 0524): 7.22 1.222 3.00 48.52  
 =====  
 ID = 3 ( 0264): 24.34 5.446 3.00 57.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0527) |  
ID= 1 DT= 5.0 min
 Area (ha)= 1.68  
 Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.28 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 105.83 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68

1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68  
 1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 241.10  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.29 (ii) 8.40 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.12  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.35 0.21 0.552 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 63.71 75.25  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.69 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.2 Ia = Dep. 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 ( 0270) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0264): 24.34 5.446 3.00 57.09  
 + ID2= 2 ( 0527): 1.68 0.552 3.00 75.25  
 =====  
 ID = 3 ( 0270): 26.02 5.998 3.00 58.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 5202) |  
ID= 1 DT= 5.0 min
 Area (ha)= 2.27  
 Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.38 0.89  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 123.02 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ID1= 1 ( 0270): 26.02 5.998 3.00 58.27  
 + ID2= 2 ( 5202): 2.27 0.664 3.00 70.18  
 =====  
 ID = 3 ( 0273): 28.29 6.662 3.00 59.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | RESERVOIR( 0274) |  
 | IN= 2----> OUT= 1 |  
DT= 5.0 min
 OVERFLOW IS OFF  
 OUTFLOW STORAGE | OUTFLOW STORAGE  
 (cms) (ha.m.) | (cms) (ha.m.)  
 0.0000 0.0000 | 0.1400 0.8343  
 0.0195 0.2416 | 0.2360 1.0014  
 0.0700 0.5564 | 0.3420 1.6616

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 INFLOW : ID= 2 ( 0273) 28.290 6.662 3.00 59.22  
 OUTFLOW: ID= 1 ( 0274) 28.290 0.294 5.17 58.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.42  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 1.3646

-----  
 | CALIB |  
 | STANDHYD ( 0526) |  
ID= 1 DT= 5.0 min
 Area (ha)= 0.94  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.73 0.21  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 79.16 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51

-----  
 | ADD HYD ( 0273) |  
1 + 2 = 3
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.3 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Max.Eff.Inten.(mm/hr)= 143.36 91.35  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.50 (ii) 11.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.55 0.14 0.664 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 45.60 70.18  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.50 0.76

0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max. Eff. Inten. (mm/hr)= 143.36 91.63  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 1.92 (ii) 6.46 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*  
 PEAK FLOW (cms)= 0.29 0.04 0.333 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 45.74 77.06  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.50 0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0279)   OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000		0.0476	0.0432
0.0096	0.0220		0.0579	0.0480
0.0206	0.0306		0.0671	0.0528
0.0297	0.0360		0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0526)	0.940	0.333	3.00	77.06
OUTFLOW: ID= 1 ( 0279)	0.940	0.054	3.33	76.45

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.15

TIME SHIFT OF PEAK FLOW (min)= 20.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0461

CALIB  
 STANDHYD ( 0574) | Area (ha)= 1.44  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.12 0.32  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 97.98 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN				
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr				
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51				
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51				
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51				
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51				
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51				
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51				
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68				
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68				
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68				
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68				
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68				
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68				
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68				
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68				
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68				
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68				
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68				
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Max. Eff. Inten. (mm/hr)= 143.36 76.27  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 2.19 (ii) 6.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.31 0.14

\*TOTALS\*  
 PEAK FLOW (cms)= 0.45 0.05 0.497 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 38.06 75.37

TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.41 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0276)   OVERFLOW IS OFF				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW	STORAGE	OUTFLOW	STORAGE
	(cms)	(ha.m.)	(cms)	(ha.m.)
0.0000	0.0000		0.0730	0.0642
0.0150	0.0327		0.0890	0.0712
0.0310	0.0455		0.1030	0.0784
0.0450	0.0536		0.0000	0.0000

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0574)	1.440	0.497	3.00	75.37
OUTFLOW: ID= 1 ( 0276)	1.440	0.083	3.25	74.99

PEAK FLOW REDUCTION [Qout/Qin](%)= 16.71  
 TIME SHIFT OF PEAK FLOW (min)= 15.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0686

ADD HYD ( 0275)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0276):	1.44	0.083	3.25	74.99
+ ID2= 2 ( 0279):	0.94	0.054	3.33	76.45
=====				
ID = 3 ( 0275):	2.38	0.137	3.25	75.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0571) | Area (ha)= 19.59  
 ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 13.32 6.27  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 361.39 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----											
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN				
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr				
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51				
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51				
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51				
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51				
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51				
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51				
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68				
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68				
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68				
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68				
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68				
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68				
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68				
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68				
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68				
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68				
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68				
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Max. Eff. Inten. (mm/hr)= 143.36 128.60  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.78 (ii) 12.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.73 1.32 4.841 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 41.88 63.89  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.46 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.6 Ia = Dep. 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 ( 0572) | Area (ha)= 11.31  
ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	8.03	3.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	274.59	40.00
Mannings n =	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	189.63	
over (min)	5.00	15.00	
Storage Coeff. (min)=	4.05 (ii)	10.78 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.24	0.09	
PEAK FLOW (cms)=	2.19	1.12	3.167 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	56.97	71.44
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.62	0.78

0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	83.26	
over (min)	5.00	15.00	
Storage Coeff. (min)=	2.63 (ii)	11.98 (ii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.29	0.09	
PEAK FLOW (cms)=	0.63	0.15	0.754 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	41.53	68.15
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.45	0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.8 Ia = Dep. 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 ( 0285)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0282):	30.90	8.009	3.00	66.65
+ ID2= 2 ( 0573):	2.66	0.754	3.00	68.15
ID = 3 ( 0285):	33.56	8.763	3.00	66.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0280)	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
IN= 2---> OUT= 1				
DT= 5.0 min				
	0.0000	0.0000	0.2300	1.1312
	0.0230	0.3704	0.2810	1.3850
	0.0900	0.8066	0.4120	2.2335

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0282)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0571):	19.59	4.841	3.00	63.89
+ ID2= 2 ( 0572):	11.31	3.167	3.00	71.44
ID = 3 ( 0282):	30.90	8.009	3.00	66.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 0573)	Area (ha)=	Total Imp(%)=	Dir. Conn.(%)=
		2.66	60.00	60.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.60	1.06
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	133.17	40.00
Mannings n =	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0285)	33.560	8.763	3.00	66.77
OUTFLOW: ID= 1 ( 0280)	33.560	0.354	5.17	66.06

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.04  
TIME SHIFT OF PEAK FLOW (min)=130.00  
MAXIMUM STORAGE USED (ha.m.)= 1.8591

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0274):	28.29	0.294	5.17	58.99
+ ID2= 2 ( 0275):	2.38	0.137	3.25	75.57
ID = 3 ( 0102):	30.67	0.405	3.58	60.28

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0102):	30.67	0.405	3.58	60.28
+ ID2= 2 ( 0280):	33.56	0.354	5.17	66.06
ID = 1 ( 0102):	64.23	0.735	3.83	63.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0102):	64.23	0.735	3.83	63.30
+ ID2= 2 ( 0481):	18.79	3.755	3.00	53.01
ID = 3 ( 0102):	83.02	4.141	3.00	60.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	83.02	4.141	3.00	60.97
+ ID2= 2 ( 0502):	117.52	4.275	3.92	37.24
=====				
ID = 1 ( 0102):	200.54	6.511	3.00	47.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (1157.9) -----

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37

1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 124.37  
 over (min) = 5.00 10.00  
 Storage Coeff. (min)= 4.30 (ii) 9.29 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.23 0.12

PEAK FLOW (cms)= 3.56 0.80 4.361 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 45.87 72.69  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.50 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0503):	200.54	5.797	3.00	47.07
+ ID2= 2 ( 5032):	13.80	4.361	3.00	72.69
=====				
ID = 3 ( 0104):	214.34	9.810	3.00	48.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	

2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

INFLOW : ID= 2 ( 0102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
ID= 1 ( 0503)	200.54	6.51	3.00	47.07	1.34	1.13
OUTFLOW: ID= 1 ( 0503)	200.54	5.80	3.00	47.07	1.27	1.09

CALIB	STANDHYD ( 5032)	Area (ha)	Total Imp(%)	Dir. Conn.(%)
		13.80	76.00	67.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	10.49 3.31
Dep. Storage (mm)=	6.00 8.00
Average Slope (%)=	1.00 1.00
Length (m)=	303.32 40.00
Mannings n =	0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68

217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

INFLOW : ID= 2 ( 0104)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
ID= 1 ( 0504)	214.34	9.81	3.00	48.72	0.83	0.35
OUTFLOW: ID= 1 ( 0504)	214.34	6.95	3.17	48.71	0.79	0.33

CALIB	STANDHYD ( 5042)	Area (ha)
		7.70

|ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 5.77 1.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 226.57 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 119.56  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.61 (ii) 11.70 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.95 0.39 2.281 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 43.30 70.99  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.47 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):	214.34	6.947	3.17	48.71
+ ID2= 2 ( 5042):	7.70	2.281	3.00	70.99
=====				
ID = 3 ( 0106):	222.04	8.125	3.00	49.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5212)  
 ID= 1 DT= 5.0 min

	Area (ha)	IMPERVIOUS	PERVIOUS (i)
Area (ha)=	15.70		3.93
Total Imp(%)=	75.00		66.00
Dir. Conn.(%)=			

Surface Area (ha)= 11.78 3.93  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

1.333 5.51 | 2.833 99.25 | 4.333 7.35 | 5.83 3.68  
 1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 139.26  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.47 (ii) 12.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 3.97 0.93 4.774 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 52.18 74.43  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.57 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 0114)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0106):	222.04	8.125	3.00	49.49
+ ID2= 2 ( 5212):	15.70	4.774	3.00	74.43
=====				
ID = 3 ( 0114):	237.74	12.899	3.00	51.13

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2----> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100

98.70 80.89 0.1100  
 128.88 81.13 0.1100  
 199.00 81.23 0.1100  
 266.11 81.68 0.1100  
 306.94 81.73 0.1100  
 331.74 81.55 0.1100 / 0.0700 Main Channel  
 336.74 80.15 0.0700 Main Channel  
 346.34 81.64 0.0700 / 0.0900 Main Channel  
 394.77 81.68 0.0900  
 431.64 81.44 0.0900  
 477.44 82.08 0.0900  
 481.25 82.81 0.0900  
 501.51 83.16 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0114)	237.74	12.90	3.00	51.13	0.85	0.58
OUTFLOW: ID= 1 ( 0505)	237.74	11.54	3.08	51.13	0.80	0.56

CALIB  
 STANDHYD ( 5052)  
 ID= 1 DT= 5.0 min

	Area (ha)	IMPERVIOUS	PERVIOUS (i)
Area (ha)=	15.90		
Total Imp(%)=	74.00		65.00
Dir. Conn.(%)=			



-----  
 Surface Area (ha)= IMPERVIOUS 11.77 PERVIOUS (i) 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 112.47  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.49 (ii) 12.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 3.96 0.76 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 4.597 (iii)  
 RUNOFF VOLUME (mm)= 85.90 42.28 70.63  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.46 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0108)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0505):	237.74	11.541	3.08	51.13
+ ID2= 2 ( 5052):	15.90	4.597	3.00	70.63
-----				
ID = 3 ( 0108):	253.64	15.789	3.00	52.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 ROUTE CHN ( 0506)  
 IN= 2----> OUT= 1

Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54

0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

----- hydrograph -----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0108)	253.64	15.79	3.00	52.36	1.77	0.90
OUTFLOW: ID= 1 ( 0506)	253.64	13.46	3.08	52.35	1.70	1.00

0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 127.79  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.10 (ii) 11.97 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.09

PEAK FLOW (cms)= 2.94 0.63 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 3.475 (iii)  
 RUNOFF VOLUME (mm)= 85.90 46.34 72.05  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.50 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0110)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.64	13.459	3.08	52.35
+ ID2= 2 ( 5062):	11.70	3.475	3.00	72.05
-----				
ID = 3 ( 0110):	265.34	15.614	3.00	53.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 CALIB  
 STANDHYD ( 5102)  
 ID= 1 DT= 5.0 min

Area (ha)= 1.70  
 Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.09 0.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 106.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 105.71  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.30 (ii) 10.79 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.35 0.11 0.445 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 40.09 63.91  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.44 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511)  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 553.6) -----

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100 / 0.0700
69.13	79.02	0.0700
92.42	79.04	0.0700
98.70	80.89	0.0700 / 0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

----- hydrograph ----- <-pipe / channel->

AREA	OPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 5102)	1.70	0.45	3.00	63.91	0.09 0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.32	3.00	63.89	0.06 0.24

CALIB  
 STANDHYD ( 5112)  
 ID= 1 DT= 5.0 min

Area (ha)= 3.00  
 Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.07 0.93  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 141.42 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 121.62  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 2.72 (ii) 10.76 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.69 0.20 0.856 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 45.49 68.93  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.49 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0117)  
 1 + 2 = 3

AREA	OPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0511):	1.70	0.322	3.00 63.89
+ ID2= 2 ( 5112):	3.00	0.856	3.00 68.93
=====			
ID = 3 ( 0117):	4.70	1.179	3.00 67.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 484.2) -----

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900
41.13	82.12	0.0900 / 0.0700
46.88	79.71	0.0700
51.41	80.90	0.0700 / 0.0900
94.29	80.56	0.0900
175.64	80.72	0.0900
192.09	80.85	0.0900

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.1245E+04	1.6	0.51	14.96
1.06	80.77	.1733E+04	4.6	0.63	11.51

Table with 6 columns: ID, Value 1, Value 2, Value 3, Value 4, Value 5. Rows 1-10.

Table with 6 columns: Value 1, Value 2, Value 3, Value 4, Value 5, Value 6. Rows 1-10.

Max. Eff. Inten. (mm/hr)= 143.36 over (min) 5.00 Storage Coeff. (min)= 2.95 (ii) 11.02 (ii) Unit Hyd. Tpeak (min)= 5.00 Unit Hyd. peak (cms)= 0.28 0.09

hydrograph table with columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL. Rows 1-2.

PEAK FLOW (cms)= 0.88 0.26 1.097 (iii) TIME TO PEAK (hrs)= 3.00 3.08 3.00 RUNOFF VOLUME (mm)= 85.90 45.28 68.43 TOTAL RAINFALL (mm)= 91.90 91.90 91.90 RUNOFF COEFFICIENT = 0.93 0.49 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 71.0 Ia = Dep. 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 ( 5122) Area (ha)= 3.90 Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00 IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 2.65 1.25 Dep. Storage (mm)= 6.00 8.00 Average Slope (%)= 1.00 1.00 Length (m)= 161.25 40.00 Mannings n = 0.013 0.250

ADD HYD ( 0119) 1 + 2 = 3

Table with 6 columns: AREA, QPEAK, TPEAK, R.V. Rows 1-3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120) 1 + 2 = 3

Table with 6 columns: AREA, QPEAK, TPEAK, R.V. Rows 1-3.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows 1-15.

IMPERVIOUS PERVIOUS (i) Surface Area (ha)= 3.08 7.92 Dep. Storage (mm)= 6.00 8.00 Average Slope (%)= 1.00 1.00 Length (m)= 270.80 40.00 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows 1-15.

Max. Eff. Inten. (mm/hr)= 143.36 76.68 over (min) 5.00 15.00 Storage Coeff. (min)= 4.02 (ii) 13.68 (ii) Unit Hyd. Tpeak (min)= 5.00 15.00 Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 0.68 0.94 1.451 (iii) TIME TO PEAK (hrs)= 3.00 3.08 3.00 RUNOFF VOLUME (mm)= 85.90 33.10 41.55 TOTAL RAINFALL (mm)= 91.90 91.90 91.90 RUNOFF COEFFICIENT = 0.93 0.36 0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP! \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 62.0 Ia = Dep. Storage (Above)

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD ( 6011) Area (ha)= 44.10 Curve Number (CN)= 62.0 Ia (mm)= 8.00 # of Linear Res. (N)= 3.00 ID= 1 DT= 5.0 min U.H. Tp(hrs)= 0.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with 8 columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows 1-15.

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.596 (i) TIME TO PEAK (hrs)= 3.833 RUNOFF VOLUME (mm)= 29.382 TOTAL RAINFALL (mm)= 91.900 RUNOFF COEFFICIENT = 0.320

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 6012) Area (ha)= 11.00 Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00

(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0124)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6011):	44.10	1.596	3.83	29.38
+ ID2= 2 ( 6012):	11.00	1.451	3.00	41.55
=====				
ID = 3 ( 0124):	55.10	1.931	3.50	31.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		NASHYD ( 6021)	
ID= 1 DT= 5.0 min	Area (ha)= 43.60	Curve Number (CN)= 62.0	# of Linear Res.(N)= 3.00
	Ia (mm)= 8.00		
	U.H. Tp(hrs)= 0.95		

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	9.19	5.58	3.68
1.167	5.51	2.667	11.03	4.167	9.19	5.67	3.68
1.250	5.51	2.750	11.03	4.250	9.19	5.75	3.68
1.333	5.51	2.833	11.03	4.333	9.19	5.83	3.68
1.417	5.51	2.917	11.03	4.417	9.19	5.92	3.68
1.500	5.51	3.000	11.03	4.500	9.19	6.00	3.68

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.426 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 29.382  
 TOTAL RAINFALL (mm)= 91.900  
 RUNOFF COEFFICIENT = 0.320

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB		
STANDHYD ( 6022)	Area (ha)= 12.90	Total Imp(%)= 35.00
ID= 1 DT= 5.0 min		Dir. Conn.(%)= 23.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	4.51		8.38		
Dep. Storage (mm)=	6.00		8.00		
Average Slope (%)=	1.00		1.00		
Length (m)=	293.26		40.00		
Mannings n =	0.013		0.250		

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	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51	0.167	3.68	1.667	9.19
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51	0.333	3.68	1.833	9.19
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51	0.500	3.68	2.000	9.19
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68	0.667	5.51	2.167	11.03
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68	0.833	5.51	2.333	11.03
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68	1.000	5.51	2.500	11.03
1.083	5.51	2.583	11.03	4.083	9.19	5.58	3.68	1.167	5.51	2.667	11.03
1.250	5.51	2.750	11.03	4.250	9.19	5.75	3.68	1.333	5.51	2.833	11.03
1.417	5.51	2.917	11.03	4.417	9.19	5.92	3.68	1.500	5.51	3.000	11.03

Max. Eff. Inten. (mm/hr)= 143.36 over (min)= 5.00  
 Storage Coeff. (min)= 4.22 (ii)  
 Unit Hyd. Tpeak (min)= 5.00

Unit Hyd. peak (cms)= 0.24 0.08  
 PEAK FLOW (cms)= 1.14 1.02 1.979 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 33.48 45.53  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.36 0.50

48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

<----- TRAVEL TIME TABLE ----->					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	114.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<--- hydrograph ---> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0126) 111.60 4.09 3.00 32.45 0.69 0.24  
 OUTFLOW : ID= 1 ( 0603) 111.60 2.68 4.50 32.44 0.62 0.22

ADD HYD ( 0125)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6021):	43.60	1.426	4.00	29.38
+ ID2= 2 ( 6022):	12.90	1.979	3.00	45.53
=====				
ID = 3 ( 0125):	56.50	2.259	3.00	33.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0124):	55.10	1.931	3.50	31.81
+ ID2= 2 ( 0125):	56.50	2.259	3.00	33.07
=====				
ID = 3 ( 0126):	111.60	4.090	3.00	32.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->		
Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400

-----  
 | CALIB |  
 | NASHYD ( 0613) | Area (ha)= 1.77 Curve Number (CN)= 66.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.22  
 -----

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Unit Hyd Qpeak (cms) = 0.302

PEAK FLOW (cms) = 0.182 (i)  
 TIME TO PEAK (hrs) = 3.083  
 RUNOFF VOLUME (mm) = 32.738  
 TOTAL RAINFALL (mm) = 91.900  
 RUNOFF COEFFICIENT = 0.356

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 6222) | Area (ha)= 2.02  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.58 0.44  
 Dep. Storage (mm)= 6.00 8.00

Average Slope (%) = 1.00 1.00  
 Length (m) = 116.05 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 72.85  
 over (min) = 5.00 10.00  
 Storage Coeff. (min) = 2.42 (ii) 6.95 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 10.00  
 Unit Hyd. peak (cms) = 0.30 0.14

PEAK FLOW (cms) = 0.62 0.07 \*TOTALS\*  
 TIME TO PEAK (hrs) = 3.00 3.00 0.692 (iii)  
 RUNOFF VOLUME (mm) = 85.90 36.38 75.00  
 TOTAL RAINFALL (mm) = 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.40 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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 ( 0614) | Area (ha)= 1.50  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 50.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.04 0.47  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 100.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 133.49  
 over (min) = 5.00 10.00  
 Storage Coeff. (min) = 2.21 (ii) 9.95 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 10.00  
 Unit Hyd. peak (cms) = 0.30 0.11

\*TOTALS\*  
 PEAK FLOW (cms) = 0.30 0.12 0.414 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.00 3.00  
 RUNOFF VOLUME (mm) = 85.90 42.17 64.03  
 TOTAL RAINFALL (mm) = 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.46 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

-----  
 | CALIB |  
 | STANDHYD ( 0615) | Area (ha)= 2.14  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00  
 -----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.67 0.47  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 119.44 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 72.85  
 over (min) = 5.00 10.00  
 Storage Coeff. (min) = 2.46 (ii) 7.00 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 10.00  
 Unit Hyd. peak (cms) = 0.30 0.14



NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
3 + 2 = 1				
ID1= 3 ( 0290):	3.64	1.148	3.00	70.48
+ ID2= 2 ( 0617):	2.31	0.718	3.00	71.48
-----				
ID = 1 ( 0290):	5.95	1.866	3.00	70.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 0290):	5.95	1.866	3.00	70.87
+ ID2= 2 ( 0618):	1.49	0.445	3.00	68.32
-----				
ID = 3 ( 0290):	7.44	2.311	3.00	70.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
3 + 2 = 1				
ID1= 3 ( 0290):	7.44	2.311	3.00	70.36
+ ID2= 2 ( 6222):	2.02	0.692	3.00	75.00
-----				
ID = 1 ( 0290):	9.46	3.003	3.00	71.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 0290):	9.46	3.003	3.00	71.35
+ ID2= 2 ( 6302):	0.86	0.330	3.00	82.56
-----				
ID = 3 ( 0290):	10.32	3.333	3.00	72.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD ( 6212)	Area (ha)=	1.15
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.75	0.40
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	87.56	40.00
Mannings n =	0.033	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	50.65
over (min)	5.00	15.00
Storage Coeff. (min)=	2.04 (ii)	13.45 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.31	0.08

\*TOTALS\*

PEAK FLOW (cms)=	0.30	0.04	0.327 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	30.24	66.41
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6232)	Area (ha)=	0.85
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.55	0.30
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	75.28	40.00
Mannings n =	0.033	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	50.65
over (min)	5.00	15.00
Storage Coeff. (min)=	1.87 (ii)	13.27 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.32	0.08

PEAK FLOW (cms)=	0.22	0.03	0.242 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	30.24	66.41
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.33	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0288)				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
1 + 2 = 3				
ID1= 1 ( 6212):	1.15	0.327	3.00	66.41
+ ID2= 2 ( 6232):	0.85	0.242	3.00	66.41
-----				
ID = 3 ( 0288):	2.00	0.570	3.00	66.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		
STANDHYD ( 0626)	Area (ha)=	0.96
ID= 1 DT= 5.0 min	Total Imp(%)=	60.00 Dir. Conn.(%)= 60.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.58	0.38
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	80.00	40.00
Mannings n =	0.033	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51

0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	11.03	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
over (min) 5.00 15.00  
Storage Coeff. (min)= 1.93 (ii) 10.88 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 0.23 0.06 0.282 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 46.42 70.10  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0297)							
1 + 2 = 3							
ID1= 1 ( 0288):	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)			
+ ID2= 2 ( 0290):	2.00	0.570	3.00	66.41			
=====							
ID = 3 ( 0297):	12.32	3.903	3.00	71.33			

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0297):	12.32	3.903	3.00	71.33
+ ID2= 2 ( 0613):	1.77	0.182	3.00	32.74
=====				
ID = 1 ( 0297):	14.09	4.060	3.00	66.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0297):	14.09	4.060	3.00	66.48
+ ID2= 2 ( 0626):	0.96	0.282	3.00	70.10
=====				
ID = 3 ( 0297):	15.05	4.341	3.00	66.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0302)				
OVERFLOW IS OFF				
IN= 2--> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1070	0.3146
	0.0150	0.1715	0.7100	0.8031

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0297):	15.050	4.341	3.00	66.71
OUTFLOW: ID= 1 ( 0302):	15.050	0.551	3.58	66.52

PEAK FLOW REDUCTION [Qout/Qin](%)= 12.70  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.6752

CALIB	
STANDHYD ( 6202)	
ID= 1 DT= 5.0 min	
Area (ha)=	1.26
Total Imp(%)=	94.00
Dir. Conn.(%)=	94.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.18	0.08
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	91.65	40.00

Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	11.03	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 60.35  
over (min) 5.00 5.00  
Storage Coeff. (min)= 2.10 (ii) 4.60 (ii)  
Unit Hyd. Tpeak (min)= 5.00 5.00  
Unit Hyd. peak (cms)= 0.31 0.23

\*TOTALS\*  
PEAK FLOW (cms)= 0.47 0.01 0.483 (iii)  
TIME TO PEAK (hrs)= 3.00 3.00 3.00  
RUNOFF VOLUME (mm)= 85.90 30.24 82.56  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.33 0.90

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

| RESERVOIR( 0292) | OVERFLOW IS OFF

IN= 2--> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0580	0.0848
	0.0090	0.0366	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 6202):	1.260	0.483	3.00	82.56
OUTFLOW: ID= 1 ( 0292):	1.260	0.047	3.58	81.74

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.81  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0745

CALIB	
STANDHYD ( 0606)	
ID= 1 DT= 5.0 min	
Area (ha)=	1.98
Total Imp(%)=	65.00
Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.29	0.69
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	114.89	40.00
Mannings n =	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	11.03	4.083	7.35	5.58	3.68
1.167	5.51	2.667	11.03	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68



1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 50.65  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.40 (ii) 13.81 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 0.51 0.06 0.562 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 30.24 66.41  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0612) | Area (ha)= 2.18  
 ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.05 0.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 120.55 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68

ADD HYD ( 0306)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0292):	1.26	0.047	3.58	81.74
+ ID2= 2 ( 0295):	2.18	0.082	3.58	82.10
=====				
ID = 3 ( 0306):	3.44	0.129	3.58	81.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0306)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0306):	3.44	0.129	3.58	81.97
+ ID2= 2 ( 0606):	1.98	0.562	3.00	66.41
=====				
ID = 1 ( 0306):	5.42	0.656	3.00	76.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0304)  
 IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36

0.750 5.51 | 2.250 11.03 | 3.750 9.19 | 5.25 3.68  
 0.833 5.51 | 2.333 11.03 | 3.833 9.19 | 5.33 3.68  
 0.917 5.51 | 2.417 11.03 | 3.917 9.19 | 5.42 3.68  
 1.000 5.51 | 2.500 11.03 | 4.000 9.19 | 5.50 3.68  
 1.083 5.51 | 2.583 11.03 | 4.083 7.35 | 5.58 3.68  
 1.167 5.51 | 2.667 11.03 | 4.167 7.35 | 5.67 3.68  
 1.250 5.51 | 2.750 9.19 | 4.250 7.35 | 5.75 3.68  
 1.333 5.51 | 2.833 9.19 | 4.333 7.35 | 5.83 3.68  
 1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 60.35  
 over (min) 5.00 5.00  
 Storage Coeff. (min)= 2.47 (ii) 4.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 5.00  
 Unit Hyd. peak (cms)= 0.29 0.22

\*TOTALS\*  
 PEAK FLOW (cms)= 0.81 0.02 0.833 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 30.24 82.56  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.33 0.90

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0295) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0612)	2.180	0.833	3.00	82.56
OUTFLOW: ID= 1 ( 0295)	2.180	0.082	3.58	82.10

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.84  
 TIME SHIFT OF PEAK FLOW (min)= 35.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1288

0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0306)	5.42	0.66	3.00	76.29	0.25	0.73
OUTFLOW: ID= 1 ( 0304)	5.42	0.34	3.08	76.28	0.18	0.60

CALIB  
 STANDHYD ( 0616) | Area (ha)= 0.44  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.10  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 54.16 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68

0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
over (min) 5.00 10.00  
Storage Coeff. (min)= 1.53 (ii) 6.07 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.33 0.15

PEAK FLOW (cms)= 0.14 0.02 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.157 (iii)  
RUNOFF VOLUME (mm)= 85.90 46.42 77.21  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102) Area (ha)= 2.49  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

Surface Area	(ha)=	1.94	0.55
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	128.84	40.00
Mannings n	=	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 92.97  
over (min) 5.00 10.00  
Storage Coeff. (min)= 1.89 (ii) 6.43 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.32 0.14

PEAK FLOW (cms)= 0.28 0.04 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.316 (iii)  
RUNOFF VOLUME (mm)= 85.90 46.42 77.21  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0619) Area (ha)= 1.64  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area	(ha)=	1.07	0.57
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	104.56	40.00

0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 282.45  
over (min) 5.00 10.00  
Storage Coeff. (min)= 2.58 (ii) 8.31 (ii)  
Unit Hyd. Tpeak (min)= 5.00 10.00  
Unit Hyd. peak (cms)= 0.29 0.13

PEAK FLOW (cms)= 0.49 0.33 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.00 0.824 (iii)  
RUNOFF VOLUME (mm)= 85.90 66.47 76.18  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.72 0.83

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 0624) Area (ha)= 0.89  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

Surface Area	(ha)=	0.69	0.20
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	77.03	40.00

ADD HYD ( 0286)  
1 + 2 = 3  
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 1 ( 6102): 2.49 0.824 3.00 76.18  
+ ID2= 2 ( 0616): 0.44 0.157 3.00 77.21  
===== ID = 3 ( 0286): 2.93 0.980 3.00 76.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)  
3 + 2 = 1  
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
ID1= 3 ( 0286): 2.93 0.980 3.00 76.34  
+ ID2= 2 ( 0624): 0.89 0.316 3.00 77.21  
===== ID = 1 ( 0286): 3.82 1.296 3.00 76.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0305) OVERFLOW IS OFF  
IN= 2--> OUT= 1  
DT= 5.0 min  
OUTFLOW (cms) STORAGE (ha.m.) OUTFLOW (cms) STORAGE (ha.m.)  
0.0000 0.0000 0.1760 0.2330  
0.0280 0.0927 0.0000 0.0000

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
INFLOW: ID= 2 ( 0286) 3.820 1.296 3.00 76.54  
OUTFLOW: ID= 1 ( 0305) 3.820 0.143 3.58 76.32

PEAK FLOW REDUCTION [Qout/Qin](%)= 11.04  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.2019

CALIB  
STANDHYD ( 0619) Area (ha)= 1.64  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

Surface Area	(ha)=	1.07	0.57
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	104.56	40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51				
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51				
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51				
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51				
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51				
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51				
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68				
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68				
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68				
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68				
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68				
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68				
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68				
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68				
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68				
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68				
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68				
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Max.Eff.Inten.(mm/hr)= 143.36 103.33  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.27 (ii) 10.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.42 0.10 0.513 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 51.79 73.96  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.56 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 83.0 Ia = Dep. 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 ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0302):	15.05	0.551	3.58	66.52
+ ID2= 2 ( 0304):	5.42	0.343	3.08	76.28
-----				
ID = 3 ( 0293):	20.47	0.810	3.50	69.10

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0293):	20.47	0.810	3.50	69.10
+ ID2= 2 ( 0305):	3.82	0.143	3.58	76.32
-----				
ID = 1 ( 0293):	24.29	0.952	3.50	70.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	24.29	0.952	3.50	70.24
+ ID2= 2 ( 0619):	1.64	0.513	3.00	73.96
-----				
ID = 3 ( 0293):	25.93	1.268	3.00	70.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6032)	29.63		
ID= 1 DT= 5.0 min	47.00	32.00	

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	13.93	15.70
Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	444.45	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME		RAIN		TIME		RAIN		TIME		RAIN	
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51				
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51				
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51				
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51				
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51				
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51				
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68				
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68				
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68				
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68				
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68				
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68				
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68				
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68				
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68				
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68				
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68				
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68				

Max.Eff.Inten.(mm/hr)= 143.36 114.52  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.41 (ii) 13.64 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.56 2.86 5.963 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 90.40 45.12 59.61  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.98 0.49 0.65

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	137.53	3.499	4.42	39.61
+ ID2= 2 ( 6032):	29.63	5.963	3.00	59.61
-----				
ID = 1 ( 0128):	167.16	7.962	3.00	43.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)	Routing time step (min)
IN= 2---> OUT= 1	5.00

DATA FOR SECTION (1414.9)			
Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

TRAVEL TIME TABLE					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	25.93	1.268	3.00	70.47
+ ID2= 2 ( 0603):	111.60	2.684	4.50	32.44
-----				
ID = 3 ( 0128):	137.53	3.499	4.42	39.61



RUNOFF COEFFICIENT = 0.93 0.54 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 75.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD (0139), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: CALIB, STANDHYD (6052), ID= 1 DT= 5.0 min, Area (ha), Total Imp(%), Dir. Conn.(%).

Table with columns: IMPERVIOUS, PERVIOUS (i), Surface Area (ha), Dep. Storage (mm), Average Slope (%), Length (m), Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Table with columns: Max.Eff.Inten. (mm/hr), over (min), Storage Coeff. (min), Unit Hyd. Tpeak (min), Unit Hyd. peak (cms), PEAK FLOW (cms), TIME TO PEAK (hrs), RUNOFF VOLUME (mm), TOTAL RAINFALL (mm), RUNOFF COEFFICIENT.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 66.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD (0132), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: ROUTE CHN (0530), IN= 2---> OUT= 1, Routing time step (min).

DATA FOR SECTION (350.0) table with columns: Distance, Elevation, Manning.

Table with columns: 3.84, 81.72, 0.1100, 5.87, 80.72, 0.1100, 9.38, 81.42, 0.1100, 49.64, 81.07, 0.1100, 80.61, 80.72, 0.1100, 85.61, 81.14, 0.1100, 93.32, 80.00, 0.1100, 95.04, 80.45, 0.1100, 102.72, 80.66, 0.1100, 110.13, 78.93, 0.1100 / 0.0700, 118.05, 78.63, 0.0700, 124.40, 78.89, 0.0700 / 0.1100, 132.18, 79.61, 0.1100, 139.34, 79.23, 0.1100, 144.67, 79.43, 0.1100, 149.63, 79.98, 0.1100, 153.42, 79.79, 0.1100, 158.56, 80.58, 0.1100, 176.89, 81.15, 0.1100.

TRAVEL TIME TABLE

Table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV. TIME (min).

hydrograph

Table with columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s). Rows for INFLOW and OUTFLOW.

Table with columns: CALIB, STANDHYD (5302), ID= 1 DT= 5.0 min, Area (ha), Total Imp(%), Dir. Conn.(%), IMPERVIOUS, PERVIOUS (i), Surface Area (ha), Dep. Storage (mm), Average Slope (%), Length (m), Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr).

Table with columns: Max.Eff.Inten. (mm/hr), over (min), Storage Coeff. (min), Unit Hyd. Tpeak (min), Unit Hyd. peak (cms), PEAK FLOW (cms), TIME TO PEAK (hrs), RUNOFF VOLUME (mm), TOTAL RAINFALL (mm), RUNOFF COEFFICIENT.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0530):	218.46	8.994	3.08	50.28
+ ID2= 2 ( 5302):	5.80	1.549	3.00	65.41
=====				
ID = 3 ( 0134):	224.26	9.858	3.00	50.67

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0120):	273.94	17.370	3.00	53.68
+ ID2= 2 ( 0134):	224.26	9.858	3.00	50.67
=====				
ID = 3 ( 0135):	498.20	27.228	3.00	52.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900

Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 570.96 40.00  
Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 119.44  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 6.29 (ii) 14.38 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.19 0.08

\*TOTALS\*

PEAK FLOW (cms)= 6.46 4.56 10.299 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 47.22 61.14  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.51 0.67

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700
85.82	76.28	0.0700
89.97	76.89	0.0700
91.35	77.38	0.0700 / 0.0900
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

<---- hydrograph ----> <-pipe / channel-->

INFLOW : ID= 2 ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
498.20	27.23	3.00	52.32	2.43	0.98	
OUTFLOW: ID= 1 ( 0507)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
498.20	21.91	3.25	52.32	2.22	0.93	

CALIB | STANDHYD ( 5072) | Area (ha)= 48.90  
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

Surface Area (ha)= IMPERVIOUS 24.45 PERVIOUS (i) 24.45

ADD HYD ( 0122)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0507):	498.20	21.911	3.25	52.32
+ ID2= 2 ( 5072):	48.90	10.299	3.00	61.14
=====				
ID = 3 ( 0122):	547.10	28.719	3.08	53.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB | STANDHYD ( 5402) | Area (ha)= 9.40  
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

Surface Area (ha)= IMPERVIOUS 4.70 PERVIOUS (i) 4.70  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 250.33 40.00  
Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 101.50











1.00	3.39	2.50	33.90	4.00	4.52	5.50	2.26
1.17	3.39	2.67	61.02	4.17	4.52	5.67	2.26
1.33	3.39	2.83	88.14	4.33	4.52	5.83	2.26

\*\*\*\*\* DETAILED OUTPUT \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\dfc2f2dc-ff44-4a3c-a861-5abd00c73915\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\dfc2f2dc-ff44-4a3c-a861-5abd00c73915\  
 DATE: 04-10-2024 TIME: 01:42:37

USER:

COMMENTS:

\*\*\*\*\*  
 \*\* SIMULATION : 5yr116.stm \*\*  
 \*\*\*\*\*

File: C:\Users\jannaormond\AppData\Local\Temp\fc287717-ea81-4509-917c-0fddd7b9a7f0\d5e9b3f9  
 Comments: Mount Hope-6 hour SCS Distribution Desig

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	2.26	1.50	5.65	3.00	12.43	4.50	3.39
0.17	2.26	1.67	5.65	3.17	12.43	4.67	3.39
0.33	2.26	1.83	5.65	3.33	12.43	4.83	3.39
0.50	3.39	2.00	6.78	3.50	5.65	5.00	2.26
0.67	3.39	2.17	6.78	3.67	5.65	5.17	2.26
0.83	3.39	2.33	6.78	3.83	5.65	5.33	2.26

STANDHYD ( 5012) | Area (ha)= 37.32  
 ID= 1 DT= 5.0 min | Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.18	23.14
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	498.80	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)=	88.14	31.75
over (min)	5.00	25.00
Storage Coeff. (min)=	7.05 (ii)	20.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.17	0.05
*TOTALS*		
PEAK FLOW (cms)=	1.98	1.00
TIME TO PEAK (hrs)=	3.00	3.33
RUNOFF VOLUME (mm)=	50.50	15.46
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.27

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. Storage (Above)

CALIB  
 NASHYD ( 5011) | Area (ha)= 80.20 Curve Number (CN)= 65.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.85

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 1.208 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 12.696  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.225

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0100)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 5011):	80.20	1.208	3.92	12.70
+ ID2= 2 ( 5012):	37.32	2.505	3.00	23.87
ID = 3 ( 0100):	117.52	2.734	3.00	16.24

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (1537.5) -----

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34

0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.93	21.56
1.21	88.05	.580E+05	7.1	0.96	21.03
1.33	88.17	.733E+05	10.6	0.99	20.67
1.44	88.28	.946E+05	15.5	0.99	20.46
1.56	88.40	.124E+06	22.8	0.99	20.35
1.67	88.51	.163E+06	32.1	0.99	20.30
1.79	88.63	.207E+06	41.2	0.99	20.28
1.90	88.74	.257E+06	54.6	0.99	20.26
2.02	88.86	.314E+06	64.7	0.99	20.25

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 1.220  
 PEAK FLOW (cms)= 0.175 (i)  
 TIME TO PEAK (hrs)= 3.000  
 RUNOFF VOLUME (mm)= 13.430  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.238

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

<--- hydrograph ---> <-pipe / channel->  

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW: ID= 2 ( 0100)	117.52	2.73	3.00	16.24	0.94	0.86
OUTFLOW: ID= 1 ( 0502)	117.52	1.95	3.67	16.24	0.80	0.79

CALIB	Area (ha)=	3.67	Curve Number (CN)=	68.8
NASHYD ( 5021)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.43		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB	Area (ha)=	2.30	Curve Number (CN)=	69.3
NASHYD ( 5691)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.07		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.102 (i)  
 TIME TO PEAK (hrs)= 3.333  
 RUNOFF VOLUME (mm)= 14.392  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.255

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.28

\*TOTALS\*

PEAK FLOW (cms)= 0.21  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 50.50  
 TOTAL RAINFALL (mm)= 56.50  
 RUNOFF COEFFICIENT = 0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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)=	1.73	Dir. Conn.(%)=	50.60
STANDHYD ( 5092)	Total Imp(%)=	50.60		
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.88	0.85		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	107.39	40.00		
Mannings n	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

CALIB	Area (ha)=	0.71	Dir. Conn.(%)=	64.00
STANDHYD ( 5082)	Total Imp(%)=	73.00		
ID= 1 DT= 5.0 min				
	IMPERVIOUS	PERVIOUS (i)		
Surface Area (ha)=	0.52	0.19		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	68.80	40.00		
Mannings n	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14  
 over (min) 5.00  
 Storage Coeff. (min)= 2.80 (ii)

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.69  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.15 (ii) 15.42 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.07

PEAK FLOW (cms)= 0.11 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.17 0.118 (iii)  
RUNOFF VOLUME (mm)= 50.50 15.57 37.91  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.28 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 5682) Area (ha)= 0.53  
ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.34	0.19
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	59.44	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 14.37  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 4.12 (ii) 23.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.24 0.05

PEAK FLOW (cms)= 0.62 0.08 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.33 0.660 (iii)  
RUNOFF VOLUME (mm)= 50.50 10.25 27.15  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.18 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 0510) Area (ha)= 0.76  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.59	0.17
Dep. Storage (mm)=	6.00	8.00

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 17.74  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 1.97 (ii) 19.32 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.31 0.06

PEAK FLOW (cms)= 0.08 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.25 0.088 (iii)  
RUNOFF VOLUME (mm)= 50.50 12.49 37.18  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.22 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 0501) Area (ha)= 6.23  
ID= 1 DT= 5.0 min Total Imp(%)= 42.00 Dir. Conn.(%)= 42.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.62	3.61
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	203.80	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Average Slope (%)=	1.00	1.00
Length (m)=	71.18	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 38.81  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 2.19 (ii) 14.88 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.31 0.08

PEAK FLOW (cms)= 0.14 0.01 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.17 0.154 (iii)  
RUNOFF VOLUME (mm)= 50.50 22.36 44.30  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.40 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5752) | Area (ha)= 0.78  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 0.51 0.27  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 72.11 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 31.87  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.21 (ii) 15.94 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.30 0.07

PEAK FLOW (cms)= 0.12 0.01 0.133 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 18.63 39.33  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.33 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

\*TOTALS\*  
PEAK FLOW (cms)= 0.33 0.05 0.358 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 22.62 40.74  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.40 0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 82.1 Ia = Dep. 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 ( 0481)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0501):	6.23	0.660	3.00	27.15
+ ID2= 2 ( 5021):	3.67	0.102	3.33	14.39
ID = 3 ( 0481):	9.90	0.710	3.00	22.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	9.90	0.710	3.00	22.42
+ ID2= 2 ( 5082):	0.71	0.118	3.00	37.91
ID = 1 ( 0481):	10.61	0.828	3.00	23.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	10.61	0.828	3.00	23.46
+ ID2= 2 ( 5092):	1.73	0.248	3.00	36.59
ID = 3 ( 0481):	12.34	1.076	3.00	25.30

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.6 Ia = Dep. 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 ( 5282) | Area (ha)= 2.08  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 1.35 0.73  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 117.76 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 39.29  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 2.96 (ii) 15.59 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.28 0.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	12.34	1.076	3.00	25.30
+ ID2= 2 ( 0510):	0.76	0.154	3.00	44.30
ID = 1 ( 0481):	13.10	1.230	3.00	26.40

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	13.10	1.230	3.00	26.40
+ ID2= 2 ( 5282):	2.08	0.358	3.00	40.74
ID = 3 ( 0481):	15.18	1.588	3.00	28.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	15.18	1.588	3.00	28.37
+ ID2= 2 ( 5682):	0.53	0.088	3.00	37.18
ID = 1 ( 0481):	15.71	1.676	3.00	28.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	15.71	1.676	3.00	28.66
+ ID2= 2 ( 5691):	2.30	0.175	3.00	13.43
ID = 3 ( 0481):	18.01	1.851	3.00	26.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0529) | Area (ha)= 1.80  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86

+ ID2= 2 ( 0522): 3.31 0.143 3.08 11.87  
 ID = 3 ( 0265): 9.06 1.129 3.00 28.85

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0523) | Area (ha)= 6.61  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 86.10  
 over (min)= 5.00 15.00  
 Storage Coeff. (min)= 4.19 (ii) 13.42 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08  
 PEAK FLOW (cms)= 0.78 0.22  
 \*TOTALS\*  
 0.968 (iii)

over (min)= 5.00 25.00  
 Storage Coeff. (min)= 2.84 (ii) 20.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.28 0.05  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.34 0.01 0.346 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 50.50 11.92 42.01  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0267)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0519): 2.08 0.337 3.00 36.99  
 + ID2= 2 ( 0529): 1.80 0.346 3.00 42.01  
 ID = 3 ( 0267): 3.88 0.683 3.00 39.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0267)  
 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0267): 3.88 0.683 3.00 39.32  
 + ID2= 2 ( 0580): 1.87 0.304 3.00 37.19  
 ID = 1 ( 0267): 5.75 0.987 3.00 38.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0265)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0267): 5.75 0.987 3.00 38.63

TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 50.50 21.71 36.10  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.38 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0260)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0265): 9.06 1.129 3.00 28.85  
 + ID2= 2 ( 0523): 6.61 0.968 3.00 36.10  
 ID = 3 ( 0260): 15.67 2.097 3.00 31.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0525) | Area (ha)= 1.45  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.94 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 98.32 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39



0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr) over (min)	88.14	31.33	
Storage Coeff. (min)	5.00	20.00	
Unit Hyd. Tpeak (min)	2.66 (ii)	16.48 (ii)	
Unit Hyd. peak (cms)	5.00	20.00	
	0.29	0.06	
*TOTALS*			
PEAK FLOW (cms)	0.23	0.02	0.245 (iii)
TIME TO PEAK (hrs)	3.00	3.17	3.00
RUNOFF VOLUME (mm)	50.50	18.34	39.24
TOTAL RAINFALL (mm)	56.50	56.50	56.50
RUNOFF COEFFICIENT	0.89	0.32	0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 76.1 Ia = Dep. 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 ( 0272)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0260):	15.67	2.097	3.00	31.91
+ ID2= 2 ( 0525):	1.45	0.245	3.00	39.24
=====				
ID = 3 ( 0272):	17.12	2.343	3.00	32.53

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0264)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

*TOTALS*				
PEAK FLOW (cms)	0.21	0.09	0.291 (iii)	
TIME TO PEAK (hrs)	3.00	3.08	3.00	
RUNOFF VOLUME (mm)	50.50	32.10	41.66	
TOTAL RAINFALL (mm)	56.50	56.50	56.50	
RUNOFF COEFFICIENT	0.89	0.57	0.74	

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.2 Ia = Dep. 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 ( 0270)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0264):	24.34	2.823	3.00	29.25
+ ID2= 2 ( 0527):	1.68	0.291	3.00	41.66
=====				
ID = 3 ( 0270):	26.02	3.114	3.00	30.05

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 5202)				
ID= 1 DT= 5.0 min				
	Area (ha)	2.27		
	Total Imp(%)	61.00 Dir. Conn.(%)= 61.00		

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)		1.38	0.89
Dep. Storage (mm)		6.00	8.00
Average Slope (%)		1.00	1.00
Length (m)		123.02	40.00
Mannings n		0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39		
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39		
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39		
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39		

		(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0272):	17.12	2.343	3.00	32.53	
+ ID2= 2 ( 0524):	7.22	0.534	3.00	21.46	
=====					
ID = 3 ( 0264):	24.34	2.823	3.00	29.25	

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 0527)			
ID= 1 DT= 5.0 min			
	Area (ha)	1.68	
	Total Imp(%)	76.00 Dir. Conn.(%)= 52.00	

		IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)		1.28	0.40
Dep. Storage (mm)		6.00	8.00
Average Slope (%)		1.00	1.00
Length (m)		105.83	40.00
Mannings n		0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----									
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39		
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39		
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39		
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39		
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39		
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39		
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26		
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26		
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26		
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26		
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26		
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26		
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26		
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26		
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26		
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26		
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26		
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26		

Max. Eff. Inten. (mm/hr) over (min)	88.14	126.57
Storage Coeff. (min)	5.00	15.00
Unit Hyd. Tpeak (min)	2.78 (ii)	10.69 (ii)
Unit Hyd. peak (cms)	5.00	15.00
	0.28	0.09

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr) over (min)	88.14	33.98
Storage Coeff. (min)	5.00	20.00
Unit Hyd. Tpeak (min)	3.04 (ii)	16.42 (ii)
Unit Hyd. peak (cms)	5.00	20.00
	0.27	0.06

*TOTALS*				
PEAK FLOW (cms)	0.33	0.05	0.366 (iii)	
TIME TO PEAK (hrs)	3.00	3.17	3.00	
RUNOFF VOLUME (mm)	50.50	19.77	38.51	
TOTAL RAINFALL (mm)	56.50	56.50	56.50	
RUNOFF COEFFICIENT	0.89	0.35	0.68	

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.3 Ia = Dep. 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 ( 0273)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0270):	26.02	3.114	3.00	30.05
+ ID2= 2 ( 5202):	2.27	0.366	3.00	38.51
=====				
ID = 3 ( 0273):	28.29	3.479	3.00	30.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0274) OVERFLOW IS OFF

IN= 2---> OUT= 1  
DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1400	0.8343
0.0195	0.2416	0.2360	1.0014
0.0700	0.5564	0.3420	1.6616

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0273)	28.290	3.479	3.00	30.73
OUTFLOW : ID= 1 ( 0274)	28.290	0.118	6.00	30.55

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.39  
TIME SHIFT OF PEAK FLOW (min)=180.00  
MAXIMUM STORAGE USED (ha.m.)= 0.7475

CALIB  
STANDHYD ( 0526)  
ID= 1 DT= 5.0 min

Area (ha)= 0.94  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	0.73	0.21
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	79.16	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26

1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14  
over (min)= 5.00  
Storage Coeff. (min)= 2.34 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.30

\*TOTALS\*  
PEAK FLOW (cms)= 0.18  
TIME TO PEAK (hrs)= 3.00  
RUNOFF VOLUME (mm)= 50.50  
TOTAL RAINFALL (mm)= 56.50  
RUNOFF COEFFICIENT = 0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.4 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0279)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0526)	0.940	0.186	3.00	43.75
OUTFLOW : ID= 1 ( 0279)	0.940	0.018	3.67	43.14

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.64  
TIME SHIFT OF PEAK FLOW (min)= 40.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0286

CALIB  
STANDHYD ( 0574)  
ID= 1 DT= 5.0 min

Area (ha)= 1.44  
Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.12	0.32
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	97.98	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14  
over (min)= 5.00  
Storage Coeff. (min)= 2.65 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.29

\*TOTALS\*  
PEAK FLOW (cms)= 0.27  
TIME TO PEAK (hrs)= 3.00  
RUNOFF VOLUME (mm)= 50.50  
TOTAL RAINFALL (mm)= 56.50  
RUNOFF COEFFICIENT = 0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.5 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0276)  
IN= 2---> OUT= 1  
DT= 5.0 min

OVERFLOW IS OFF

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0574)	1.440	0.281	3.00	42.84
OUTFLOW : ID= 1 ( 0276)	1.440	0.027	3.58	42.46

PEAK FLOW REDUCTION [Qout/Qin](%)= 9.77  
TIME SHIFT OF PEAK FLOW (min)= 35.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0427

ADD HYD ( 0275)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0276):	1.44	0.027	3.58	42.46
+ ID2= 2 ( 0279):	0.94	0.018	3.67	43.14
ID = 3 ( 0275):	2.38	0.045	3.58	42.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 0571)  
ID= 1 DT= 5.0 min

Area (ha)= 19.59  
Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	13.32	6.27
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	361.39	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr). Rows show data points from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 88.14 over (min)= 5.00
Storage Coeff. (min)= 5.81 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.20

PEAK FLOW (cms)= 2.24
TIME TO PEAK (hrs)= 3.00
RUNOFF VOLUME (mm)= 50.50
TOTAL RAINFALL (mm)= 56.50
RUNOFF COEFFICIENT = 0.89

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 63.6
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: CALIB STANDHYD (0572), Area (ha), Total Imp(%), Dir. Conn.(%), IMPERVIOUS (ha), PERVIOUS (i) (ha).

Table with columns: ADD HYD (0282), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show sub-area contributions for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: CALIB STANDHYD (0573), Area (ha), Total Imp(%), Dir. Conn.(%), IMPERVIOUS (ha), PERVIOUS (i) (ha), Surface Area (ha), Dep. Storage (mm), Average Slope (%), Length (m), Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with columns: TIME RAIN, TIME RAIN, TIME RAIN, TIME RAIN. Rows show data points from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 88.14 over (min)= 29.87

Average Slope (%)= 1.00
Length (m)= 274.59
Mannings n = 0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with columns: TIME RAIN, TIME RAIN, TIME RAIN, TIME RAIN. Rows show data points from 0.083 to 1.500 hours.

Max. Eff. Inten. (mm/hr)= 88.14 over (min)= 5.00
Storage Coeff. (min)= 4.93 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.22

PEAK FLOW (cms)= 1.32
TIME TO PEAK (hrs)= 3.00
RUNOFF VOLUME (mm)= 50.50
TOTAL RAINFALL (mm)= 56.50
RUNOFF COEFFICIENT = 0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 76.1
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

over (min)= 5.00
Storage Coeff. (min)= 3.19 (ii)
Unit Hyd. Tpeak (min)= 5.00
Unit Hyd. peak (cms)= 0.27
PEAK FLOW (cms)= 0.39
TIME TO PEAK (hrs)= 3.00
RUNOFF VOLUME (mm)= 50.50
TOTAL RAINFALL (mm)= 56.50
RUNOFF COEFFICIENT = 0.89

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 74.8
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: ADD HYD (0285), AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show sub-area contributions for ID1, ID2, and ID3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with columns: RESERVOIR (0280), OVERFLOW IS OFF, IN=, DT=, OUTFLOW, STORAGE, AREA, QPEAK, TPEAK, R.V., INFLOW, OUTFLOW.

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.96
TIME SHIFT OF PEAK FLOW (min)=145.00
MAXIMUM STORAGE USED (ha.m.)= 1.0295

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0274):	28.29	0.118	6.00	30.55
+ ID2= 2 ( 0275):	2.38	0.045	3.58	42.73
=====				
ID = 3 ( 0102):	30.67	0.153	5.00	31.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	30.67	0.153	5.00	31.49
+ ID2= 2 ( 0280):	33.56	0.186	5.42	35.56
=====				
ID = 1 ( 0102):	64.23	0.338	5.17	33.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0102):	64.23	0.338	5.17	33.62
+ ID2= 2 ( 0481):	18.79	1.984	3.00	27.24
=====				
ID = 3 ( 0102):	83.02	2.092	3.00	32.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	83.02	2.092	3.00	32.18
+ ID2= 2 ( 0502):	117.52	1.949	3.67	16.24
=====				
ID = 1 ( 0102):	200.54	3.234	3.00	22.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	200.54	3.23	3.00	22.84	1.01	0.90
OUTFLOW: ID= 1 ( 0503)	200.54	2.68	3.08	22.84	0.92	0.85

CALIB			
STANDHYD ( 5032)			
ID= 1 DT= 5.0 min	Area (ha)=	Dir. Conn.(%)	
	13.80		
	Total Imp(%)=	76.00	

IMPERVIOUS				PERVIOUS (i)			
Surface Area (ha)=	Dep. Storage (mm)=	Average Slope (%)=	Length (m)=	Mannings n			
	10.49	6.00	303.32	0.013	3.31	8.00	40.00
		1.00				1.00	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)=	88.14	47.47
over (min)	5.00	20.00
Storage Coeff. (min)=	5.23 (ii)	16.94 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.21	0.06

ROUTE CHN( 0503)  
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION (1157.9) ----->			
Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

TRAVEL TIME TABLE ----->					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<--- hydrograph ---> <-pipe / channel->

				*TOTALS*
PEAK FLOW (cms)=	2.14	0.25		2.311 (iii)
TIME TO PEAK (hrs)=	3.00	3.17		3.00
RUNOFF VOLUME (mm)=	50.50	20.36		40.55
TOTAL RAINFALL (mm)=	56.50	56.50		56.50
RUNOFF COEFFICIENT =	0.89	0.36		0.72

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0503):	200.54	2.683	3.08	22.84
+ ID2= 2 ( 5032):	13.80	2.311	3.00	40.55
=====				
ID = 3 ( 0104):	214.34	4.822	3.00	23.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION ( 815.4) ----->			
Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	

569.63 83.21 0.0900  
 610.76 83.63 0.0900  
 663.54 83.88 0.0900

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

Max.Eff.Inten.(mm/hr)= 88.14 44.72  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.39 (ii) 16.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.06

<---- hydrograph ----> <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0104)	214.34	4.82	3.00	23.98	0.72	0.32
OUTFLOW: ID= 1 ( 0504)	214.34	3.35	3.17	23.98	0.68	0.31

PEAK FLOW (cms)= 1.18 0.14  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 18.94  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34

\*TOTALS\*

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 5042) Area (ha)= 7.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	5.77	1.92
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	226.57	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ADD HYD ( 0106)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0504):	214.34	3.354	3.17	23.98

+ ID2= 2 ( 5042): 7.70 1.275 3.00 39.45  
 ID = 3 ( 0106): 222.04 4.014 3.00 24.51

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 24.08 41.52  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.43 0.73

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5212) Area (ha)= 15.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.78	3.93
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	323.52	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ADD HYD ( 0114)  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0106):	222.04	4.014	3.00	24.51
+ ID2= 2 ( 5212):	15.70	2.634	3.00	41.52
ID = 3 ( 0114):	237.74	6.649	3.00	25.64

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 / 0.0900
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900

Max.Eff.Inten.(mm/hr)= 88.14 56.11  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.44 (ii) 16.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.20 0.06

PEAK FLOW (cms)= 2.39 0.36

\*TOTALS\*  
 2.634 (iii)



over (min) 5.00 20.00  
Storage Coeff. (min)= 4.98 (ii) 16.53 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 1.77 0.23 1.929 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 20.65 40.05  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.37 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0110)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.64	7.488	3.08	26.49
+ ID2= 2 ( 5062):	11.70	1.929	3.00	40.05
ID = 3 ( 0110):	265.34	8.776	3.00	27.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 5102)	1.70	1.09	0.61
ID= 1 DT= 5.0 min	Total Imp(%)= 64.00	Dir. Conn.(%)= 52.00	
Surface Area (ha)	1.09	6.00	8.00
Dep. Storage (mm)	1.00	1.00	40.00
Average Slope (%)	106.46	0.013	0.250
Length (m)			
Mannings n			

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)
60.88	81.23	69.13	79.02	79.04	79.04	80.89	81.13
69.13	79.02	79.04	79.04	80.89	81.13	81.13	81.13
79.04	79.04	80.89	80.89	81.13	81.13	81.13	81.13
80.89	80.89	81.13	81.13	81.13	81.13	81.13	81.13
81.13	81.13	81.13	81.13	81.13	81.13	81.13	81.13

60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
79.04	79.04	0.0700	Main Channel
80.89	80.89	0.0700 / 0.1100	Main Channel
81.13	81.13	0.1100	
81.13	81.23	0.1100	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

----- hydrograph ----- <-pipe / channel->

INFLOW: ID= 2 ( 5102)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
	1.70	0.24	3.00	34.49	0.05	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.18	3.00	34.48	0.03	0.24

CALIB	Area (ha)	IMPERVIOUS	PERVIOUS (i)
STANDHYD ( 5112)	3.00	2.07	0.93
ID= 1 DT= 5.0 min	Total Imp(%)= 69.00	Dir. Conn.(%)= 58.00	
Surface Area (ha)	2.07	6.00	8.00
Dep. Storage (mm)	1.00	1.00	40.00
Average Slope (%)	141.42	0.013	0.250
Length (m)			
Mannings n			

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Max.Eff.Inten.(mm/hr)= 88.14 46.23  
over (min)= 5.00 20.00  
Storage Coeff. (min)= 3.31 (ii) 15.14 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.26 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.42 0.07 0.468 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 20.13 37.74  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.36 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117)





0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 26.15  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 4.88 (ii) 19.74 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.22 0.06

PEAK FLOW (cms)= 0.41 0.30 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.25 0.600 (iii)  
RUNOFF VOLUME (mm)= 50.50 13.46 19.39  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.24 0.34

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6011):	44.10	0.608	3.92	11.52
+ ID2= 2 ( 6012):	11.00	0.600	3.00	19.39

ID = 3 ( 0124): 55.10 0.784 3.50 13.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)= 43.60	Curve Number (CN)= 62.0
NASHYD ( 6021)	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)= 0.95	

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 0.545 (i)  
TIME TO PEAK (hrs)= 4.000  
RUNOFF VOLUME (mm)= 11.521  
TOTAL RAINFALL (mm)= 56.500  
RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB			
1 + 2 = 3	AREA	(ha)= 12.90	
ID= 1 DT= 5.0 min	Total Imp(%)= 35.00	Dir. Conn.(%)= 23.00	

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0125)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6021):	43.60	0.545	4.00	11.52
+ ID2= 2 ( 6022):	12.90	0.896	3.00	22.13
ID = 3 ( 0125):	56.50	0.981	3.00	13.94

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)				
1 + 2 = 3	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0124):	55.10	0.784	3.50	13.09
+ ID2= 2 ( 0125):	56.50	0.981	3.00	13.94
ID = 3 ( 0126):	111.60	1.699	3.00	13.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
IN= 2--> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->			
Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	4.51	8.38	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	293.26	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 26.96  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 5.12 (ii) 19.80 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.21 0.06

PEAK FLOW (cms)= 0.69 0.33 \*TOTALS\*  
TIME TO PEAK (hrs)= 3.00 3.25 0.896 (iii)  
RUNOFF VOLUME (mm)= 50.50 13.66 22.13  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.24 0.39

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.

225.58 91.35 0.1400  
 252.71 91.66 0.1400  
 274.11 91.86 0.1400

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ---->				<-pipe / channel->	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	1.70	3.00	13.52	0.57
OUTFLOW: ID= 1 ( 0603)	111.60	1.06	4.67	13.52	0.21

CALIB	Area (ha)=	1.77	Curve Number (CN)=	66.0
NASHYD ( 0613)	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
ID= 1 DT= 5.0 min	U.H. Tp(hrs)=	0.22		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	21.42
over (min)	5.00	20.00
Storage Coeff. (min)=	2.94 (ii)	19.03 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.28	0.06
*TOTALS*		
PEAK FLOW (cms)=	0.38	0.02
TIME TO PEAK (hrs)=	3.00	3.25
RUNOFF VOLUME (mm)=	50.50	14.88
TOTAL RAINFALL (mm)=	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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)=	1.50
STANDHYD ( 0614)	Total Imp(%)=	69.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	50.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.04		0.47
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	100.00		40.00
Mannings n =	0.013		0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms)= 0.302

PEAK FLOW (cms)= 0.070 (i)  
 TIME TO PEAK (hrs)= 3.083  
 RUNOFF VOLUME (mm)= 13.099  
 TOTAL RAINFALL (mm)= 56.500  
 RUNOFF COEFFICIENT = 0.232

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)=	2.02
STANDHYD ( 6222)	Total Imp(%)=	78.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	78.00

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	1.58		0.44
Dep. Storage (mm)=	6.00		8.00
Average Slope (%)=	1.00		1.00
Length (m)=	116.05		40.00
Mannings n =	0.013		0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 49.89  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.69 (ii) 14.16 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.08

- PEAK FLOW (cms)= 0.18 0.04 \*TOTALS\* 0.216 (iii)
- TIME TO PEAK (hrs)= 3.00 3.17 3.00
- RUNOFF VOLUME (mm)= 50.50 18.47 34.48
- TOTAL RAINFALL (mm)= 56.50 56.50 56.50
- RUNOFF COEFFICIENT = 0.89 0.33 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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)=	2.14
STANDHYD ( 0615)	Total Imp(%)=	78.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	78.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 1.67 0.47  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 119.44 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 21.42  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.99 (ii) 19.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.40 0.02 0.415 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 14.88 42.66  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.26 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.9 Ia = Dep. 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 ( 0618) | Area (ha)= 1.49  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.16 0.33  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 99.67 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 106.27  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.68 (ii) 11.16 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.29 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.18 0.06 0.231 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 50.50 23.69 37.09  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.42 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.30 0.16

\*TOTALS\*  
 PEAK FLOW (cms)= 0.20 0.00 0.200 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 50.50 11.92 48.18  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6302) | Area (ha)= 0.86  
 ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.81 0.05  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 75.72 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 24.07  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 2.27 (ii) 5.31 (ii)

CALIB  
 STANDHYD ( 0617) | Area (ha)= 2.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.80 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 124.10 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 123.95  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 3.06 (ii) 11.03 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.27 0.09

PEAK FLOW (cms)= 0.28 0.11 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 0.372 (iii)  
 RUNOFF VOLUME (mm)= 50.50 27.66 39.08  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.49 0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 69.7 Ia = Dep. 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 ( 0290)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0614):	1.50	0.216	3.00	34.48
+ ID2= 2 ( 0615):	2.14	0.415	3.00	42.66
=====				
ID = 3 ( 0290):	3.64	0.631	3.00	39.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	3.64	0.631	3.00	39.29
+ ID2= 2 ( 0617):	2.31	0.372	3.00	39.08
=====				
ID = 1 ( 0290):	5.95	1.003	3.00	39.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	5.95	1.003	3.00	39.21
+ ID2= 2 ( 0618):	1.49	0.231	3.00	37.09
=====				
ID = 3 ( 0290):	7.44	1.234	3.00	38.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
3 + 2 = 1				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0290):	7.44	1.234	3.00	38.78
+ ID2= 2 ( 6222):	2.02	0.392	3.00	42.66
=====				
ID = 1 ( 0290):	9.46	1.626	3.00	39.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0290):	9.46	1.626	3.00	39.61
+ ID2= 2 ( 6302):	0.86	0.200	3.00	48.18
=====				
ID = 3 ( 0290):	10.32	1.826	3.00	40.32

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB		STANDHYD ( 6212)		Area (ha)= 1.15
ID= 1 DT= 5.0 min		Total Imp(%)= 65.00		Dir. Conn.(%)= 65.00

		IMPERVIOUS		PERVIOUS (i)	
Surface Area	(ha)=	0.75		0.40	
Dep. Storage	(mm)=	6.00		8.00	
Average Slope	(%)=	1.00		1.00	
Length	(m)=	87.56		40.00	
Mannings n	=	0.013		0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 2.48 (ii) 20.19 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.29 0.05

PEAK FLOW (cms)= 0.18 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.33 0.187 (iii)  
 RUNOFF VOLUME (mm)= 50.50 11.92 36.99  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 6232)		Area (ha)= 0.85
ID= 1 DT= 5.0 min		Total Imp(%)= 65.00		Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area	(ha)=	0.55		0.30	
Dep. Storage	(mm)=	6.00		8.00	
Average Slope	(%)=	1.00		1.00	
Length	(m)=	75.28		40.00	
Mannings n	=	0.013		0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 16.86  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 2.27 (ii) 19.98 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.06

PEAK FLOW (cms)= 0.13 0.01 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.25 0.140 (iii)  
 RUNOFF VOLUME (mm)= 50.50 11.92 36.98  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.21 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0288)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 6212):	1.15	0.187	3.00	36.99
+ ID2= 2 ( 6232):	0.85	0.140	3.00	36.98
=====				
ID = 3 ( 0288):	2.00	0.327	3.00	36.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 0626)				
ID= 1 DT= 5.0 min				
	Area (ha)	Total Imp(%)	Dir. Conn.(%)= 60.00	
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	0.58	0.38		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	80.00	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	34.84	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.35 (ii)	15.60 (iii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.30	0.07	
*TOTALS*			
PEAK FLOW (cms)=	0.14	0.02	0.155 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	50.50	20.24	38.38
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.36	0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0297)				
1 + 2 = 3				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0288):	2.00	0.327	3.00	36.98
+ ID2= 2 ( 0290):	10.32	1.826	3.00	40.32
=====				
ID = 3 ( 0297):	12.32	2.153	3.00	39.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
3 + 2 = 1				
	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0297):	12.32	2.153	3.00	39.78
+ ID2= 2 ( 0613):	1.77	0.070	3.08	13.10
=====				
ID = 1 ( 0297):	14.09	2.212	3.00	36.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0297):	14.09	2.212	3.00	36.43
+ ID2= 2 ( 0626):	0.96	0.155	3.00	38.38
=====				
ID = 3 ( 0297):	15.05	2.366	3.00	36.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0302)				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1070	0.3146
	0.0150	0.1715	0.7100	0.8031
AREA QPEAK TPEAK R.V.				
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 0297)	15.050	2.366	3.00	36.56
OUTFLOW: ID= 1 ( 0302)	15.050	0.207	4.00	36.36

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.76  
 TIME SHIFT OF PEAK FLOW (min)= 60.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.3959

CALIB				
STANDHYD ( 6202)				
ID= 1 DT= 5.0 min				
	Area (ha)	Total Imp(%)	Dir. Conn.(%)= 94.00	
IMPERVIOUS PERVIOUS (i)				
Surface Area (ha)=	1.18	0.08		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	91.65	40.00		
Mannings n =	0.013	0.250		

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	24.07	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.55 (ii)	5.59 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.16	
*TOTALS*			
PEAK FLOW (cms)=	0.29	0.00	0.292 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	50.50	11.92	48.18
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.21	0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0292)				
IN= 2----> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.0580	0.0848
	0.0090	0.0366	0.0000	0.0000
AREA QPEAK TPEAK R.V.				
	(ha)	(cms)	(hrs)	(mm)
INFLOW : ID= 2 ( 6202)	1.260	0.292	3.00	48.18
OUTFLOW: ID= 1 ( 0292)	1.260	0.018	4.00	47.37

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.32  
 TIME SHIFT OF PEAK FLOW (min)= 60.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0459

CALIB  
STANDHYD ( 0606) | Area (ha)= 1.98  
ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.29	0.69
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	114.89	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr) over (min)=	88.14	16.86	25.00
Storage Coeff. (min)=	2.92 (ii)	20.63 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.28	0.05	
PEAK FLOW (cms)=	0.31	0.02	0.321 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	
RUNOFF VOLUME (mm)=	50.50	11.92	36.99
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.21	0.65

Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.28	0.15	
PEAK FLOW (cms)=	0.50	0.01	0.503 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	
RUNOFF VOLUME (mm)=	50.50	11.92	48.18
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.21	0.85

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0295) | OVERFLOW IS OFF  
IN= 2---> OUT= 1 |  
DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.180	0.503	3.00	48.18
2.180	0.032	4.00	47.72

INFLOW : ID= 2 ( 0612)  
OUTFLOW: ID= 1 ( 0295)

PEAK FLOW REDUCTION [Qout/Qin](%)= 6.41  
TIME SHIFT OF PEAK FLOW (min)= 60.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0793

ADD HYD ( 0306) |  
1 + 2 = 3 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0292):	1.26	0.018	4.00	47.37
+ ID2= 2 ( 0295):	2.18	0.032	4.00	47.72
ID = 3 ( 0306):	3.44	0.051	4.00	47.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 0612) | Area (ha)= 2.18  
ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.05	0.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	120.55	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr) over (min)=	88.14	24.00
Storage Coeff. (min)=	3.01 (ii)	6.05 (ii)

ADD HYD ( 0306) |  
3 + 2 = 1 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0306):	3.44	0.051	4.00	47.59
+ ID2= 2 ( 0606):	1.98	0.321	3.00	36.99
ID = 1 ( 0306):	5.42	0.345	3.00	43.72

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0304) |  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.50	0.0700	
36.57	92.00	0.0700	
90.03	91.00	0.0700	
124.58	90.00	0.0700 / 0.0350	Main Channel
128.34	89.59	0.0350	Main Channel
129.84	89.59	0.0350	Main Channel
132.39	90.00	0.0350 / 0.0700	Main Channel
163.76	91.00	0.0700	
187.47	91.00	0.0700	
203.83	91.00	0.0700	
306.44	92.00	0.0700	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

<---- hydrograph ----> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0306) 5.42 0.34 3.00 43.72 0.18 0.60  
 OUTFLOW: ID= 1 ( 0304) 5.42 0.16 3.08 43.71 0.12 0.48

Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.32 0.07  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.08 0.01 0.088 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 20.24 43.82  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.36 0.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0616) | Area (ha)= 0.44  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

CALIB  
 STANDHYD ( 6102) | Area (ha)= 2.49  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.34 0.10  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 54.16 40.00  
 Mannings n = 0.013 0.250

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.94 0.55  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 128.84 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 34.84  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 1.86 (ii) 15.11 (ii)

Max.Eff.Inten.(mm/hr)= 88.14 34.84  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.30 (ii) 15.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.30 0.07

1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 151.56  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.13 (ii) 10.49 (ii)

PEAK FLOW (cms)= 0.17 0.01 0.177 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 20.24 43.83  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.36 0.78

PEAK FLOW (cms)= 0.30 0.15 0.432 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 50.50 34.18 42.34  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.60 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.3 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.9 Ia = Dep. 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 ( 0624) | Area (ha)= 0.89  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

ADD HYD ( 0286)  
 1 + 2 = 3  
 ID1= 1 ( 6102): 2.49 0.432 3.00 42.34  
 + ID2= 2 ( 0616): 0.44 0.088 3.00 43.82  
 ID = 3 ( 0286): 2.93 0.519 3.00 42.56

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.69 0.20  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 77.03 40.00  
 Mannings n = 0.013 0.250

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

ADD HYD ( 0286)  
 3 + 2 = 1  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0286):	2.93	0.519	3.00	42.56
+ ID2= 2 ( 0624):	0.89	0.177	3.00	43.83
=====				
ID = 1 ( 0286):	3.82	0.696	3.00	42.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0305)	OVERFLOW IS OFF			
IN= 2--> OUT= 1				
DT= 5.0 min				
	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
	0.0000	0.0000	0.1760	0.2330
	0.0280	0.0927	0.0000	0.0000

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0286)	3.820	0.696	3.00	42.86
OUTFLOW: ID= 1 ( 0305)	3.820	0.056	4.00	42.64

PEAK FLOW REDUCTION [Qout/Qin](%)= 8.07  
 TIME SHIFT OF PEAK FLOW (min)= 60.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.1195

CALIB	Area (ha)=	1.64
STANDHYD ( 0619)	Total Imp(%)=	65.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	1.07	0.57
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	104.56	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39

	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0293):	20.47	0.324	3.58	38.31
+ ID2= 2 ( 0305):	3.82	0.056	4.00	42.64
=====				
ID = 1 ( 0293):	24.29	0.378	3.58	38.99

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	24.29	0.378	3.58	38.99
+ ID2= 2 ( 0619):	1.64	0.285	3.00	41.01
=====				
ID = 3 ( 0293):	25.93	0.542	3.00	39.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)=	29.63
STANDHYD ( 6032)	Total Imp(%)=	47.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	32.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	13.93	15.70
Dep. Storage	1.50	8.00
Average Slope	1.00	1.00
Length	444.45	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26

0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	40.77	
over (min)	5.00	20.00	
Storage Coeff. (min)=	2.76 (ii)	15.20 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.28	0.07	
PEAK FLOW (cms)=	0.26	0.04	*TOTALS* 0.285 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	50.50	23.40	41.01
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.41	0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0302):	15.05	0.207	4.00	36.36
+ ID2= 2 ( 0304):	5.42	0.162	3.08	43.71
=====				
ID = 3 ( 0293):	20.47	0.324	3.58	38.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				

1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	43.25	
over (min)	5.00	20.00	
Storage Coeff. (min)=	6.58 (ii)	18.73 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.18	0.06	
PEAK FLOW (cms)=	2.12	1.02	*TOTALS* 2.798 (iii)
TIME TO PEAK (hrs)=	3.00	3.25	3.00
RUNOFF VOLUME (mm)=	55.00	19.85	31.10
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.97	0.35	0.55

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0293):	25.93	0.542	3.00	39.12
+ ID2= 2 ( 0603):	111.60	1.061	4.67	13.52
=====				
ID = 3 ( 0128):	137.53	1.413	4.50	18.34

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0128):	137.53	1.413	4.50	18.34
+ ID2= 2 ( 6032):	29.63	2.798	3.00	31.10
=====				
ID = 1 ( 0128):	167.16	3.648	3.00	20.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ROUTE CHN( 0604)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.16	3.65	3.00	20.61	2.16	0.09
OUTFLOW: ID= 1 ( 0604)	167.16	1.39	4.50	20.60	1.69	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
 STANDHYD ( 6042) | Area (ha)= 24.00  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	18.72	5.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	400.00	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 74.55  
 over (min) 5.00 20.00

Storage Coeff. (min)= 6.17 (ii) 15.95 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.19 0.07

\*TOTALS\*

PEAK FLOW (cms)= 3.75 0.55 4.133 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 26.16 42.95  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.46 0.76

263.15 82.90 0.1100  
 278.14 82.80 0.1100  
 282.35 81.68 0.1100  
 285.02 82.19 0.1100  
 336.56 82.53 0.1100  
 404.40 82.68 0.1100

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 0130)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

ID1= 1 ( 0604):	167.16	1.389	4.50	20.60
+ ID2= 2 ( 6042):	24.00	4.133	3.00	42.95
ID = 3 ( 0130):	191.16	5.282	3.00	23.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.03	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.16	5.28	3.00	23.41	1.00	0.33
OUTFLOW: ID= 1 ( 0605)	191.16	2.17	3.50	23.40	0.84	0.27

CALIB  
 STANDHYD ( 6112) | Area (ha)= 11.40  
 ID= 1 DT= 5.0 min | Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	8.21	3.19
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	275.68	40.00
Mannings n =	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 52.52  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.94 (ii) 16.18 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 1.65 0.27 1.835 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 22.66 39.92  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.40 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. 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 ( 0139)|

	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0605):	191.16	2.166	3.50	23.40
+ ID2= 2 ( 6112):	11.40	1.835	3.00	39.92
-----				
ID = 3 ( 0139):	202.56	3.490	3.00	24.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 6052)	Area (ha)=	15.90
ID= 1 DT= 5.0 min	Total Imp(%)=	74.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS (ha)=	PERVIOUS (i) (mm)=
Surface Area	11.77	4.13
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	325.58	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 39.13  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.46 (ii) 18.10 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00

Unit Hyd. peak (cms)= 0.20 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.38 0.25 2.545 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 50.50 17.30 38.88  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.31 0.69

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0139):	202.56	3.490	3.00	24.33
+ ID2= 2 ( 6052):	15.90	2.545	3.00	38.88
-----				
ID = 3 ( 0132):	218.46	6.035	3.00	25.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0530)|  
 | IN= 2---> OUT= 1 | Routing time step (min)\*= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	

149.63 79.98 0.1100  
 153.42 79.79 0.1100  
 158.56 80.58 0.1100  
 176.89 81.15 0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0132)	218.46	6.04	3.00	25.39	0.66	0.68
OUTFLOW: ID= 1 ( 0530)	218.46	4.69	3.08	25.39	0.59	0.65

CALIB STANDHYD ( 5302)	Area (ha)=	5.80
ID= 1 DT= 5.0 min	Total Imp(%)=	66.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS (ha)=	PERVIOUS (i) (mm)=
Surface Area	3.83	1.97
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	196.64	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 36.34  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.03 (ii) 17.06 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.24 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.77 0.11 0.847 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 16.72 35.64  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.30 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134) |  
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
498.20	14.89	3.00	26.61
498.20	11.05	3.17	26.61

0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

<---- hydrograph ----> <-pipe / channel->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
498.20	14.89	3.00	26.61	1.89	0.85
498.20	11.05	3.17	26.61	1.68	0.79

INFLOW : ID= 2 ( 0135)  
OUTFLOW: ID= 1 ( 0507)

-----  
| CALIB |  
| STANDHYD ( 5072) | Area (ha)= 48.90  
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00  
-----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	24.45	24.45
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	570.96	40.00
Mannings n =	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39

ID1= 1 ( 0530): 218.46 4.691 3.08 25.39  
+ ID2= 2 ( 5302): 5.80 0.847 3.00 35.64  
=====

ID = 3 ( 0134): 224.26 5.164 3.00 25.66

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0135) |  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120):	273.94	9.731	3.00	27.39
+ ID2= 2 ( 0134):	224.26	5.164	3.00	25.66
ID = 3 ( 0135):	498.20	14.895	3.00	26.61

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ROUTE CHN ( 0507) |  
IN= 2--> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700
85.82	76.28	0.0700
89.97	76.89	0.0700
91.35	77.38	0.0700 / 0.0900
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.16	76.44	.113E+03	0.0	0.14	88.10

0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 45.91  
over (min) 10.00 20.00  
Storage Coeff. (min)= 7.64 (ii) 19.51 (ii)  
Unit Hyd. Tpeak (min)= 10.00 20.00  
Unit Hyd. peak (cms)= 0.13 0.06

\*TOTALS\*

PEAK FLOW (cms)= 3.56 1.66 4.659 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 21.05 31.65  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.37 0.56

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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 ( 0507):	498.20	11.050	3.17	26.61
+ ID2= 2 ( 5072):	48.90	4.659	3.00	31.65
ID = 3 ( 0122):	547.10	14.997	3.08	27.06

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| CALIB |  
| STANDHYD ( 5402) | Area (ha)= 9.40  
-----









29.33	0.17	60.58	0.44	91.83	0.40	123.08	0.18	154.33	0.11
29.42	0.17	60.67	0.44	91.92	0.40	123.17	0.18	154.42	0.11
29.50	0.17	60.75	0.43	92.00	0.40	123.25	0.18	154.50	0.11
29.58	0.17	60.83	0.43	92.08	0.40	123.33	0.18	154.58	0.11
29.67	0.17	60.92	0.42	92.17	0.40	123.42	0.18	154.67	0.11
29.75	0.17	61.00	0.42	92.25	0.39	123.50	0.18	154.75	0.11
29.83	0.17	61.08	0.42	92.33	0.39	123.58	0.18	154.83	0.11
29.92	0.16	61.17	0.42	92.42	0.39	123.67	0.18	154.92	0.11
30.00	0.16	61.25	0.41	92.50	0.39	123.75	0.18	155.00	0.11
30.08	0.16	61.33	0.41	92.58	0.38	123.83	0.18	155.08	0.11
30.17	0.16	61.42	0.40	92.67	0.38	123.92	0.18	155.17	0.11
30.25	0.16	61.50	0.40	92.75	0.38	124.00	0.18	155.25	0.11
30.33	0.16	61.58	0.40	92.83	0.38	124.08	0.18	155.33	0.11
30.42	0.16	61.67	0.40	92.92	0.38	124.17	0.18	155.42	0.11
30.50	0.16	61.75	0.39	93.00	0.37	124.25	0.18	155.50	0.11
30.58	0.16	61.83	0.39	93.08	0.37	124.33	0.19	155.58	0.11
30.67	0.16	61.92	0.39	93.17	0.37	124.42	0.19	155.67	0.11
30.75	0.16	62.00	0.38	93.25	0.37	124.50	0.19	155.75	0.11
30.83	0.15	62.08	0.38	93.33	0.37	124.58	0.19	155.83	0.10
30.92	0.15	62.17	0.38	93.42	0.37	124.67	0.20	155.92	0.11
31.00	0.15	62.25	0.38	93.50	0.37	124.75	0.20	156.00	0.10
31.08	0.15	62.33	0.39	93.58	0.37	124.83	0.20		
31.17	0.15	62.42	0.39	93.67	0.37	124.92	0.20		

```

V V I SSSSS U U A L (v 6.2.2018)
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
W V I SSSSS UUUUU A A LLLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

```

Developed and Distributed by Smart City Water Inc  
Copyright 2007 - 2022 Smart City Water Inc  
All rights reserved.

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat  
Output filename:  
C:\Users\jannaormond\AppData\Local\Civica\WH5\860df144-956f-4cfc-88fc-f31f1a71e94a\5fc1d607-0661-472f-bc18-22ab67700107\

Unit Hyd Qpeak (cms) = 3.621  
PEAK FLOW (cms) = 0.185 (i)  
TIME TO PEAK (hrs) = 3.250  
RUNOFF VOLUME (mm) = 1.833  
TOTAL RAINFALL (mm) = 24.775  
RUNOFF COEFFICIENT = 0.074  
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha) = 37.32	Dir. Conn.(%) = 24.00
STANDHYD ( 5012)	Total Imp (%) = 38.00	
ID= 1 DT= 5.0 min		
IMPERVIOUS PERVIOUS (i)		
Surface Area (ha) = 14.18	23.14	
Dep. Storage (mm) = 6.00	8.00	
Average Slope (%) = 1.00	1.00	
Length (m) = 498.80	40.00	
Mannings n = 0.013	0.250	
Max. Eff. Inten. (mm/hr) = 52.91	3.40	
over (min) = 10.00	45.00	
Storage Coeff. (min) = 8.64 (ii)	42.26 (ii)	
Unit Hyd. Tpeak (min) = 10.00	45.00	
Unit Hyd. peak (cms) = 0.12	0.03	
PEAK FLOW (cms) = 0.87	0.11	*TOTALS*
TIME TO PEAK (hrs) = 2.08	2.92	0.878 (iii)
RUNOFF VOLUME (mm) = 18.78	2.57	6.45
TOTAL RAINFALL (mm) = 24.78	24.78	24.78
RUNOFF COEFFICIENT = 0.76	0.10	0.26

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. 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 ( 0100)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5011):	80.20	0.185	3.25	1.83
+ ID2= 2 ( 5012):	37.32	0.878	2.08	6.45

Summary filename:  
C:\Users\jannaormond\AppData\Local\Civica\WH5\860df144-956f-4cfc-88fc-f31f1a71e94a\5fc1d607-0661-472f-bc18-22ab67700107\

DATE: 04-10-2024 TIME: 01:42:46  
USER:

COMMENTS: \_\_\_\_\_  
\*\*\*\*\*  
\*\* SIMULATION : CHI4HR5M025.stm \*\*  
\*\*\*\*\*

READ STORM | Filename: C:\Users\jannaormond\AppData\Local\Temp\fc287717-ea81-4509-917c-0fddd7b9a7f0\8e2d92a  
Ptotal= 24.78 mm | Comments: CHI4HR5M025.stm

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	0.89	1.00	1.83	2.00	34.69	3.00	2.83
0.08	0.93	1.08	2.02	2.08	19.59	3.08	2.62
0.17	0.97	1.17	2.25	2.17	13.23	3.17	2.44
0.25	1.01	1.25	2.54	2.25	9.84	3.25	2.29
0.33	1.07	1.33	2.93	2.33	7.78	3.33	2.15
0.42	1.12	1.42	3.47	2.42	6.41	3.42	2.03
0.50	1.19	1.50	4.24	2.50	5.43	3.50	1.92
0.58	1.26	1.58	5.46	2.58	4.71	3.58	1.83
0.67	1.34	1.67	7.61	2.67	4.16	3.67	1.74
0.75	1.43	1.75	12.29	2.75	3.72	3.75	1.66
0.83	1.54	1.83	28.03	2.83	3.37	3.83	1.59
0.92	1.67	1.92	71.13	2.92	3.07		

CALIB | NASHYD ( 5011) | Area (ha) = 80.20 | Curve Number (CN) = 65.0  
ID= 1 DT= 5.0 min | Ia (mm) = 8.00 | # of Linear Res. (N) = 3.00  
U.H. Tp(hrs) = 0.85

ID = 3 ( 0100): 117.52 0.885 2.08 3.30  
NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502) | Routing time step (min)' = 5.00  
IN= 2--> OUT= 1

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.494E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35



1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0100)	117.52	0.89	2.08	3.30	0.53	0.64
OUTFLOW: ID= 1 ( 0502)	117.52	0.37	3.00	3.30	0.34	0.49

CALIB						
NASHYD ( 5691)	Area (ha)=	2.30	Curve Number (CN)=	69.3		
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.07				

Unit Hyd Qpeak (cms)= 1.220

PEAK FLOW (cms)= 0.019 (i)  
TIME TO PEAK (hrs)= 2.083  
RUNOFF VOLUME (mm)= 2.001  
TOTAL RAINFALL (mm)= 24.775  
RUNOFF COEFFICIENT = 0.081

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB						
NASHYD ( 5021)	Area (ha)=	3.67	Curve Number (CN)=	68.8		
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.43				

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.015 (i)  
TIME TO PEAK (hrs)= 2.667  
RUNOFF VOLUME (mm)= 2.136  
TOTAL RAINFALL (mm)= 24.775  
RUNOFF COEFFICIENT = 0.086

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB						
NASHYD ( 5021)	Area (ha)=	3.67	Curve Number (CN)=	68.8		
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00		
	U.H. Tp(hrs)=	0.43				

Unit Hyd Qpeak (cms)= 0.328

PEAK FLOW (cms)= 0.015 (i)  
TIME TO PEAK (hrs)= 2.667  
RUNOFF VOLUME (mm)= 2.136  
TOTAL RAINFALL (mm)= 24.775  
RUNOFF COEFFICIENT = 0.086

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB						
NASHYD ( 5682)	Area (ha)=	0.53	Curve Number (CN)=	65.00		
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00		

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.7 Ia = Dep. 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 ( 5682)	Area (ha)=	0.53	Curve Number (CN)=	65.00		
ID= 1 DT= 5.0 min	Total Imp(%)=	65.00	Dir. Conn.(%)=	65.00		

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)=	0.34	0.19
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	59.44	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	1.53
over (min)=	5.00	50.00
Storage Coeff. (min)=	2.14 (ii)	48.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	50.00
Unit Hyd. peak (cms)=	0.31	0.02

\*TOTALS\*

PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)
TIME TO PEAK (hrs)=	2.00	3.08	2.00
RUNOFF VOLUME (mm)=	18.78	1.80	12.78
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.07	0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 64.5 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB						
STANDHYD ( 0501)	Area (ha)=	6.23	Curve Number (CN)=			

STANDHYD ( 5092)	Area (ha)=	1.73	Curve Number (CN)=			
ID= 1 DT= 5.0 min	Total Imp(%)=	50.60	Dir. Conn.(%)=	50.60		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.88	0.85
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	107.39	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	4.05
over (min)=	5.00	35.00
Storage Coeff. (min)=	3.06 (ii)	34.39 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.27	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.15	0.01	0.145 (iii)
TIME TO PEAK (hrs)=	2.00	2.75	2.00
RUNOFF VOLUME (mm)=	18.78	3.83	11.38
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.15	0.46

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 81.8 Ia = Dep. 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 ( 5082)	Area (ha)=	0.71	Curve Number (CN)=			
ID= 1 DT= 5.0 min	Total Imp(%)=	73.00	Dir. Conn.(%)=	64.00		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.52	0.19
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	68.80	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	3.88
over (min)=	5.00	35.00
Storage Coeff. (min)=	2.34 (ii)	34.21 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.30	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.08	0.00	0.081 (iii)
------------------	------	------	-------------

ID= 1 DT= 5.0 min	Total Imp(%)=	42.00	Dir. Conn.(%)=	42.00
-------------------	---------------	-------	----------------	-------

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.62	3.61
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	203.80	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	1.14
over (min)=	5.00	60.00
Storage Coeff. (min)=	4.49 (ii)	56.43 (ii)
Unit Hyd. Tpeak (min)=	5.00	60.00
Unit Hyd. peak (cms)=	0.23	0.02

\*TOTALS\*

PEAK FLOW (cms)=	0.37	0.01	0.372 (iii)
TIME TO PEAK (hrs)=	2.00	3.25	2.00
RUNOFF VOLUME (mm)=	18.78	1.42	8.71
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.06	0.35

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 58.4 Ia = Dep. 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 ( 0510)	Area (ha)=	0.76	Curve Number (CN)=			
ID= 1 DT= 5.0 min	Total Imp(%)=	78.00	Dir. Conn.(%)=	78.00		

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.59	0.17
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	71.18	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	4.05
over (min)=	5.00	35.00
Storage Coeff. (min)=	2.39 (ii)	33.73 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.30	0.03

\*TOTALS\*

PEAK FLOW (cms)=	0.11	0.00	0.105 (iii)
TIME TO PEAK (hrs)=	2.00	2.75	2.00

RUNOFF VOLUME (mm)= 18.78 3.83 15.46  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.15 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 81.8 Ia = Dep. 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 ( 5752) | Area (ha)= 0.78  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	0.51	0.27
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	72.11	40.00
Mannings n =	0.013	0.250

Max.Eff.Inten.(mm/hr)=	71.13	3.11
over (min)	5.00	40.00
Storage Coeff. (min)=	2.41 (ii)	37.25 (ii)
Unit Hyd. Tpeak (min)=	5.00	40.00
Unit Hyd. peak (cms)=	0.30	0.03

	*TOTALS*		
PEAK FLOW (cms)=	0.09	0.00	0.090 (iii)
TIME TO PEAK (hrs)=	2.00	2.83	2.00
RUNOFF VOLUME (mm)=	18.78	2.98	13.22
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.12	0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.6 Ia = Dep. 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 ( 5282) | Area (ha)= 2.08  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	10.61	0.453	2.00	6.72
+ ID2= 2 ( 5092):	1.73	0.145	2.00	11.38
=====				
ID = 3 ( 0481):	12.34	0.599	2.00	7.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	12.34	0.599	2.00	7.37
+ ID2= 2 ( 0510):	0.76	0.105	2.00	15.46
=====				
ID = 1 ( 0481):	13.10	0.704	2.00	7.84

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	13.10	0.704	2.00	7.84
+ ID2= 2 ( 5282):	2.08	0.220	2.00	13.56
=====				
ID = 3 ( 0481):	15.18	0.924	2.00	8.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	15.18	0.924	2.00	8.62
+ ID2= 2 ( 5682):	0.53	0.063	2.00	12.78
=====				
ID = 1 ( 0481):	15.71	0.987	2.00	8.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.35	0.73
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	117.76	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	4.12
over (min)	5.00	35.00
Storage Coeff. (min)=	3.23 (ii)	34.35 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.27	0.03

	*TOTALS*		
PEAK FLOW (cms)=	0.22	0.00	0.220 (iii)
TIME TO PEAK (hrs)=	2.00	2.75	2.00
RUNOFF VOLUME (mm)=	18.78	3.89	13.56
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.16	0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 82.1 Ia = Dep. 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 ( 0481)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0501):	6.23	0.372	2.00	8.71
+ ID2= 2 ( 5021):	3.67	0.015	2.67	2.14
=====				
ID = 3 ( 0481):	9.90	0.372	2.00	6.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	9.90	0.372	2.00	6.27
+ ID2= 2 ( 5082):	0.71	0.081	2.00	12.95
=====				
ID = 1 ( 0481):	10.61	0.453	2.00	6.72

ADD HYD ( 0481)				
1 + 2 = 3	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0481):	15.71	0.987	2.00	8.76
+ ID2= 2 ( 5691):	2.30	0.019	2.00	2.00
=====				
ID = 3 ( 0481):	18.01	0.997	2.00	7.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0481)				
3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0481):	18.01	0.997	2.00	7.90
+ ID2= 2 ( 5752):	0.78	0.090	2.00	13.22
=====				
ID = 1 ( 0481):	18.79	1.087	2.00	8.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 0524) | Area (ha)= 7.22 Curve Number (CN)= 80.7  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.20

Unit Hyd Qpeak (cms)= 1.393

PEAK FLOW (cms)= 0.075 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 3.616  
 TOTAL RAINFALL (mm)= 24.775  
 RUNOFF COEFFICIENT = 0.146

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 NASHYD ( 0522) | Area (ha)= 3.31 Curve Number (CN)= 63.1  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.16

Unit Hyd Qpeak (cms)= 0.800

PEAK FLOW (cms)= 0.017 (i)  
 TIME TO PEAK (hrs)= 2.250  
 RUNOFF VOLUME (mm)= 1.692  
 TOTAL RAINFALL (mm)= 24.775  
 RUNOFF COEFFICIENT = 0.068

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Average Slope (%)= 1.00 1.00  
 Length (m)= 117.76 40.00  
 Mannings n = 0.013 0.250  
 Max.Eff.Inten.(mm/hr)= 71.13 1.44  
 over (min) 5.00 55.00  
 Storage Coeff. (min)= 3.23 (ii) 50.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 55.00  
 Unit Hyd. peak (cms)= 0.27 0.02

\*TOTALS\*  
 PEAK FLOW (cms)= 0.22 0.00 0.220 (iii)  
 TIME TO PEAK (hrs)= 2.00 3.17 2.00  
 RUNOFF VOLUME (mm)= 18.78 1.70 12.78  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0580) Area (ha)= 1.87  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.22 0.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 111.65 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 1.53  
 over (min) 5.00 50.00  
 Storage Coeff. (min)= 3.13 (ii) 49.37 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 50.00  
 Unit Hyd. peak (cms)= 0.27 0.02

\*TOTALS\*  
 PEAK FLOW (cms)= 0.20 0.00 0.200 (iii)  
 TIME TO PEAK (hrs)= 2.00 3.08 2.00  
 RUNOFF VOLUME (mm)= 18.78 1.80 12.82  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 64.5 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 0519) Area (ha)= 2.08  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.35 0.73  
 Dep. Storage (mm)= 6.00 8.00

CALIB  
 STANDHYD ( 0529) Area (ha)= 1.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.40 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 109.54 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 1.44  
 over (min) 5.00 55.00  
 Storage Coeff. (min)= 3.09 (ii) 50.42 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 55.00  
 Unit Hyd. peak (cms)= 0.27 0.02

\*TOTALS\*  
 PEAK FLOW (cms)= 0.23 0.00 0.232 (iii)  
 TIME TO PEAK (hrs)= 2.00 3.17 2.00  
 RUNOFF VOLUME (mm)= 18.78 1.70 15.00  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0267)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0519): 2.08 0.220 2.00 12.78  
 + ID2= 2 ( 0529): 1.80 0.232 2.00 15.00  
 ID = 3 ( 0267): 3.88 0.452 2.00 13.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0267)  
 3 + 2 = 1 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0267): 3.88 0.452 2.00 13.81  
 + ID2= 2 ( 0580): 1.87 0.200 2.00 12.82  
 ID = 1 ( 0267): 5.75 0.651 2.00 13.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0265)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0267): 5.75 0.651 2.00 13.49  
 + ID2= 2 ( 0522): 3.31 0.017 2.25 1.69  
 ID = 3 ( 0265): 9.06 0.655 2.00 9.18

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0523) Area (ha)= 6.61  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 50.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 4.96 1.65  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 209.92 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 13.92  
 over (min) 5.00 25.00  
 Storage Coeff. (min)= 4.57 (ii) 23.69 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.23 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.47 0.03 0.469 (iii)  
 TIME TO PEAK (hrs)= 2.00 2.50 2.00  
 RUNOFF VOLUME (mm)= 18.78 4.53 11.65  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.18 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0260)  
 1 + 2 = 3 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0265): 9.06 0.655 2.00 9.18  
 + ID2= 2 ( 0523): 6.61 0.469 2.00 11.65  
 ID = 3 ( 0260): 15.67 1.124 2.00 10.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0525) Area (ha)= 1.45  
 ID= 1 DT= 5.0 min Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.94 0.51  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 98.32 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 2.84  
 over (min) 5.00 40.00  
 Storage Coeff. (min)= 2.90 (ii) 39.03 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 40.00  
 Unit Hyd. peak (cms)= 0.28 0.03

\*TOTALS\*  
 PEAK FLOW (cms)= 0.16 0.00 0.159 (iii)  
 TIME TO PEAK (hrs)= 2.00 2.83 2.00  
 RUNOFF VOLUME (mm)= 18.78 2.91 13.21  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.12 0.53

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0272) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0260): 15.67 1.124 2.00 10.22  
 + ID2= 2 ( 0525): 1.45 0.159 2.00 13.21  
 =====  
 ID = 3 ( 0272): 17.12 1.283 2.00 10.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0264) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0272): 17.12 1.283 2.00 10.48  
 + ID2= 2 ( 0524): 7.22 0.075 2.33 3.62  
 =====  
 ID = 3 ( 0264): 24.34 1.296 2.00 8.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 0527) | Area (ha)= 1.68  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 76.00 Dir. Conn.(%)= 52.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.28 0.40  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 105.83 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 29.61  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.03 (ii) 17.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.27 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 0.15 0.02 0.148 (iii)  
 TIME TO PEAK (hrs)= 2.00 2.33 2.00  
 RUNOFF VOLUME (mm)= 18.78 7.97 13.58  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.32 0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.2 Ia = Dep. 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 ( 0270) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0264): 24.34 1.296 2.00 8.44  
 + ID2= 2 ( 0527): 1.68 0.148 2.00 13.58  
 =====  
 ID = 3 ( 0270): 26.02 1.444 2.00 8.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 5202) | Area (ha)= 2.27  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 61.00 Dir. Conn.(%)= 61.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.38 0.89  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

Length (m)= 123.02 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 3.38  
 over (min) 5.00 40.00  
 Storage Coeff. (min)= 3.32 (ii) 37.00 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 40.00  
 Unit Hyd. peak (cms)= 0.26 0.03

\*TOTALS\*  
 PEAK FLOW (cms)= 0.22 0.00 0.223 (iii)  
 TIME TO PEAK (hrs)= 2.00 2.83 2.00  
 RUNOFF VOLUME (mm)= 18.78 3.23 12.70  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.13 0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.3 Ia = Dep. 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 ( 0273) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 | (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0270): 26.02 1.444 2.00 8.77  
 + ID2= 2 ( 5202): 2.27 0.223 2.00 12.70  
 =====  
 ID = 3 ( 0273): 28.29 1.667 2.00 9.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | RESERVOIR( 0274) | OVERFLOW IS OFF  
 | IN= 2----> OUT= 1 |  
 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1400	0.8343
0.0195	0.2416	0.2360	1.0014
0.0700	0.5564	0.3420	1.6616

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
28.290	1.667	2.00	9.09
28.290	0.020	4.17	8.98

INFLOW : ID= 2 ( 0273)  
 OUTFLOW: ID= 1 ( 0274)

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.17  
 TIME SHIFT OF PEAK FLOW (min)=130.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.2416

-----  
 | CALIB |  
 | STANDHYD ( 0526) | Area (ha)= 0.94  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

-----  
 IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 0.73 0.21  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 79.16 40.00  
 Mannings n = 0.013 0.250

Max.Eff.Inten.(mm/hr)= 71.13 3.40  
 over (min) 5.00 40.00  
 Storage Coeff. (min)= 2.54 (ii) 36.16 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 40.00  
 Unit Hyd. peak (cms)= 0.29 0.03

\*TOTALS\*  
 PEAK FLOW (cms)= 0.13 0.00 0.128 (iii)  
 TIME TO PEAK (hrs)= 2.00 2.83 2.00  
 RUNOFF VOLUME (mm)= 18.78 3.24 15.33  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.13 0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 78.4 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | RESERVOIR( 0279) | OVERFLOW IS OFF  
 | IN= 2----> OUT= 1 |  
 | DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0476	0.0432
0.0096	0.0220	0.0579	0.0480
0.0206	0.0306	0.0671	0.0528
0.0297	0.0360	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)

INFLOW : ID= 2 ( 0526) 0.940 0.128 2.00 15.33  
 OUTFLOW: ID= 1 ( 0279) 0.940 0.005 3.50 14.72

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.82  
 TIME SHIFT OF PEAK FLOW (min)= 90.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0112

AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 INFLOW : ID= 2 ( 0574) 1.440 0.189 2.00 15.15  
 OUTFLOW: ID= 1 ( 0276) 1.440 0.008 3.42 14.77

PEAK FLOW REDUCTION [Qout/Qin](%)= 4.07  
 TIME SHIFT OF PEAK FLOW (min)= 85.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0168

CALIB  
 STANDHYD ( 0574) | Area (ha)= 1.44  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.12	0.32	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	97.98	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	2.31	
over (min)	5.00	45.00	
Storage Coeff. (min)=	2.89 (ii)	42.12 (ii)	
Unit Hyd. Tpeak (min)=	5.00	45.00	
Unit Hyd. peak (cms)=	0.28	0.03	
PEAK FLOW (cms)=	0.19	0.00	*TOTALS*
TIME TO PEAK (hrs)=	2.00	2.92	0.189 (iii)
RUNOFF VOLUME (mm)=	18.78	2.39	15.15
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.10	0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.5 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0276) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0730	0.0642
0.0150	0.0327	0.0890	0.0712
0.0310	0.0455	0.1030	0.0784
0.0450	0.0536	0.0000	0.0000

ADD HYD ( 0275) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0276): 1.44 0.008 3.42 14.77  
 + ID2= 2 ( 0279): 0.94 0.005 3.50 14.72  
 =====  
 ID = 3 ( 0275): 2.38 0.013 3.50 14.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0571) | Area (ha)= 19.59  
 ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	13.32	6.27	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	361.39	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	7.16	
over (min)	5.00	35.00	
Storage Coeff. (min)=	6.33 (ii)	31.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.19	0.03	
PEAK FLOW (cms)=	1.16	0.06	*TOTALS*
TIME TO PEAK (hrs)=	2.00	2.67	1.162 (iii)
RUNOFF VOLUME (mm)=	18.78	3.43	2.00
TOTAL RAINFALL (mm)=	24.78	24.78	11.10
RUNOFF COEFFICIENT =	0.76	0.14	24.78
			0.45

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.6 Ia = Dep. 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 ( 0572) | Area (ha)= 11.31  
 ID= 1 DT= 5.0 min | Total Imp(%)= 71.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	8.03	3.28	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	274.59	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	16.43	
over (min)	5.00	25.00	
Storage Coeff. (min)=	5.37 (ii)	23.26 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.21	0.05	
PEAK FLOW (cms)=	0.73	0.08	*TOTALS*
TIME TO PEAK (hrs)=	2.00	2.50	0.742 (iii)
RUNOFF VOLUME (mm)=	18.78	6.09	2.00
TOTAL RAINFALL (mm)=	24.78	24.78	12.43
RUNOFF COEFFICIENT =	0.76	0.25	24.78
			0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 76.1 Ia = Dep. 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 ( 0282) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0571): 19.59 1.162 2.00 11.10  
 + ID2= 2 ( 0572): 11.31 0.742 2.00 12.43  
 =====  
 ID = 3 ( 0282): 30.90 1.904 2.00 11.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 0573) | Area (ha)= 2.66  
 ID= 1 DT= 5.0 min | Total Imp(%)= 60.00 Dir. Conn.(%)= 60.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.60	1.00	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	133.17	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	2.67	
over (min)	5.00	45.00	
Storage Coeff. (min)=	3.48 (ii)	40.49 (ii)	
Unit Hyd. Tpeak (min)=	5.00	45.00	
Unit Hyd. peak (cms)=	0.26	0.03	
PEAK FLOW (cms)=	0.25	0.00	*TOTALS*
TIME TO PEAK (hrs)=	2.00	2.92	0.253 (iii)
RUNOFF VOLUME (mm)=	18.78	2.75	2.00
TOTAL RAINFALL (mm)=	24.78	24.78	12.36
RUNOFF COEFFICIENT =	0.76	0.11	24.78
			0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 74.8 Ia = Dep. 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 ( 0285) |  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0282): 30.90 1.904 2.00 11.59  
 + ID2= 2 ( 0573): 2.66 0.253 2.00 12.36  
 =====  
 ID = 3 ( 0285): 33.56 2.156 2.00 11.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0280) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min |

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.2300	1.1312

0.0230 0.3704 | 0.2810 1.3850  
 0.0900 0.8066 | 0.4120 2.2335

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
INFLOW : ID= 2 ( 0285)	33.560	2.156	2.00	11.65
OUTFLOW: ID= 1 ( 0280)	33.560	0.023	4.42	11.35

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.07  
 TIME SHIFT OF PEAK FLOW (min)=145.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.3704

ADD HYD ( 0102)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0274):	28.29	0.020	4.17	8.98
+ ID2= 2 ( 0275):	2.38	0.013	3.50	14.75
=====				
ID = 3 ( 0102):	30.67	0.032	4.00	9.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	30.67	0.032	4.00	9.42
+ ID2= 2 ( 0280):	33.56	0.023	4.42	11.35
=====				
ID = 1 ( 0102):	64.23	0.055	4.00	10.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0102)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0102):	64.23	0.055	4.00	10.43
+ ID2= 2 ( 0481):	18.79	1.087	2.00	8.12
=====				
ID = 3 ( 0102):	83.02	1.096	2.00	9.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<--- hydrograph ---> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	200.54	1.12	2.00	6.03	0.60	0.67
OUTFLOW: ID= 1 ( 0503)	200.54	0.67	2.17	6.03	0.46	0.58

CALIB  
 STANDHYD ( 5032)  
 ID= 1 DT= 5.0 min

Area (ha)= 13.80  
 Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	10.49	3.31
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	303.32	40.00
Mannings n =	0.013	0.250

Max. Eff. Inten. (mm/hr)=	71.13	6.32
over (min)	5.00	35.00
Storage Coeff. (min)=	5.70 (ii)	31.92 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.20	0.03

\*TOTALS\*

PEAK FLOW (cms)=	1.16	0.03	1.163 (iii)
TIME TO PEAK (hrs)=	2.00	2.67	
RUNOFF VOLUME (mm)=	18.78	3.81	13.83
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.15	0.56

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0102)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0102):	83.02	1.096	2.00	9.91
+ ID2= 2 ( 0502):	117.52	0.374	3.00	3.30
=====				
ID = 1 ( 0102):	200.54	1.117	2.00	6.03

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 / 0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89

ADD HYD ( 0104)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0503):	200.54	0.667	2.17	6.03
+ ID2= 2 ( 5032):	13.80	1.163	2.00	13.83
=====				
ID = 3 ( 0104):	214.34	1.568	2.08	6.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85

0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0104)	214.34	1.57	2.08	6.54	0.58	0.28
OUTFLOW: ID= 1 ( 0504)	214.34	0.99	2.33	6.54	0.54	0.29

CALIB	STANDHYD ( 5042)	ID= 1 DT= 5.0 min
Area (ha)=	7.70	
Total Imp(%)=	75.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	5.77	1.92
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	226.57	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	5.87
over (min)	5.00	35.00
Storage Coeff. (min)=	4.78 (ii)	31.80 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.22	0.03
PEAK FLOW (cms)=	0.69	0.02
TIME TO PEAK (hrs)=	2.00	2.67
RUNOFF VOLUME (mm)=	18.78	3.48
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.14

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 68.0 Ia = Dep. 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 ( 0106)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0504):	214.34	0.991	2.33	6.54
+ ID2= 2 ( 5042):	7.70	0.690	2.00	13.42
ID = 3 ( 0106):	222.04	1.238	2.17	6.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 5212)	ID= 1 DT= 5.0 min
Area (ha)=	15.70	
Total Imp(%)=	75.00	Dir. Conn.(%)= 66.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.78	3.93
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	323.52	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	8.76
over (min)	5.00	30.00
Storage Coeff. (min)=	5.92 (ii)	28.93 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.19	0.04
PEAK FLOW (cms)=	1.27	0.05
TIME TO PEAK (hrs)=	2.00	2.58
RUNOFF VOLUME (mm)=	18.78	4.78
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.19

\*TOTALS\*

1.277 (iii)

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. 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 ( 0114)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0106):	222.04	1.238	2.17	6.77
+ ID2= 2 ( 5212):	15.70	1.277	2.00	14.02
ID = 3 ( 0114):	237.74	2.324	2.08	7.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)	Routing time step (min)=	5.00
Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700 Main Channel
336.74	80.15	0.0700 Main Channel
346.34	81.64	0.0700 / 0.0900 Main Channel
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900
501.51	83.16	0.0900

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68

1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.52
1.73	80.74	.909E+04	43.1	0.81	3.59
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0114)	237.74	2.32	2.08	7.25	0.32	0.30
OUTFLOW: ID= 1 ( 0505)	237.74	1.79	2.25	7.25	0.27	0.27

CALIB	STANDHYD ( 5052)	ID= 1 DT= 5.0 min
Area (ha)=	15.90	
Total Imp(%)=	74.00	Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.77	4.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	325.58	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	5.31
over (min)	5.00	35.00
Storage Coeff. (min)=	5.94 (ii)	34.05 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.19	0.03
PEAK FLOW (cms)=	1.27	0.03
TIME TO PEAK (hrs)=	2.00	2.67
RUNOFF VOLUME (mm)=	18.78	3.30
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.13

\*TOTALS\*

1.269 (iii)

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0108)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0505):	237.74	1.788	2.25	7.25
+ ID2= 2 ( 5052):	15.90	1.269	2.00	13.36
===== ID = 3 ( 0108):	253.64	2.506	2.17	7.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
IN= 2----> OUT= 1  
Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel
203.29	79.35	0.0700 / 0.0900	Main Channel
204.01	79.67	0.0900	
236.47	80.40	0.0900	
277.80	80.48	0.0900	
305.35	80.37	0.0900	
346.67	80.41	0.0900	
387.99	80.33	0.0900	
415.54	80.53	0.0900	
447.88	80.49	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36

CN\* = 71.0 Ia = Dep. 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 ( 0110)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.64	2.397	2.25	7.63
+ ID2= 2 ( 5062):	11.70	0.983	2.00	13.57
===== ID = 3 ( 0110):	265.34	2.824	2.17	7.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5102)  
ID= 1 DT= 5.0 min  
Area (ha)= 1.70  
Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.09	0.61	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	106.46	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	4.79	
over (min)=	5.00	35.00	
Storage Coeff. (min)=	3.04 (ii)	32.33 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.27	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.15	0.00	0.147 (iii)
TIME TO PEAK (hrs)=	2.00	2.67	2.00
RUNOFF VOLUME (mm)=	18.78	3.02	11.20
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.12	0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
0.68	78.91	.352E+03	0.9	0.76	6.52	
0.80	79.02	.480E+03	1.4	0.84	5.88	
0.91	79.13	.627E+03	1.9	0.92	5.38	
1.03	79.25	.793E+03	2.7	0.99	4.98	
1.15	79.37	.103E+04	3.8	1.09	4.55	
1.28	79.50	.135E+04	5.2	1.16	4.28	
1.40	79.62	.175E+04	7.1	1.20	4.12	
1.52	79.75	.228E+04	9.3	1.21	4.08	
1.65	79.87	.318E+04	11.7	1.10	4.52	
1.77	80.00	.524E+04	15.8	0.90	5.52	
1.90	80.12	.973E+04	24.3	0.74	6.69	
2.02	80.24	.158E+05	39.7	0.75	6.62	
2.15	80.37	.230E+05	59.2	0.77	6.46	
2.27	80.49	.349E+05	90.3	0.77	6.44	

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0108)	253.64	2.51	2.17	7.63	1.00	0.98
OUTFLOW: ID= 1 ( 0506)	253.64	2.40	2.25	7.63	0.99	0.97

CALIB  
STANDHYD ( 5062)  
ID= 1 DT= 5.0 min  
Area (ha)= 11.70  
Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	8.78	2.92	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	279.28	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	7.29	
over (min)=	5.00	35.00	
Storage Coeff. (min)=	5.42 (ii)	30.19 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.20	0.04	

			*TOTALS*
PEAK FLOW (cms)=	0.98	0.03	0.983 (iii)
TIME TO PEAK (hrs)=	2.00	2.67	2.00
RUNOFF VOLUME (mm)=	18.78	3.90	13.57
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.16	0.55

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

CN\* = 71.0 Ia = Dep. 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 ( 0110)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.64	2.397	2.25	7.63
+ ID2= 2 ( 5062):	11.70	0.983	2.00	13.57
===== ID = 3 ( 0110):	265.34	2.824	2.17	7.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5102)  
ID= 1 DT= 5.0 min  
Area (ha)= 1.70  
Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.09	0.61	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	106.46	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	4.79	
over (min)=	5.00	35.00	
Storage Coeff. (min)=	3.04 (ii)	32.33 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.27	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.15	0.00	0.147 (iii)
TIME TO PEAK (hrs)=	2.00	2.67	2.00
RUNOFF VOLUME (mm)=	18.78	3.02	11.20
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.12	0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511)  
IN= 2----> OUT= 1  
Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 5102)	1.70	0.15	2.00	11.20	0.03	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.07	2.17	11.19	0.01	0.24



```

-----
| CALIB |
| STANDHYD ( 5112) | Area (ha)= 3.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.07 0.93
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 141.42 40.00
Mannings n = 0.013 0.250

```

```

Max.Eff.Inten.(mm/hr)= 71.13 6.09
over (min)= 5.00 35.00
Storage Coeff. (min)= 3.60 (ii) 30.22 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.25 0.04
*TOTALS*
PEAK FLOW (cms)= 0.27 0.01 0.272 (iii)
TIME TO PEAK (hrs)= 2.00 2.67 2.00
RUNOFF VOLUME (mm)= 18.78 3.73 12.45
TOTAL RAINFALL (mm)= 24.78 24.78 24.78
RUNOFF COEFFICIENT = 0.76 0.15 0.50

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0511): 1.70 0.075 2.17 11.19
+ ID2= 2 ( 5112): 3.00 0.272 2.00 12.45
=====
ID = 3 ( 0117): 4.70 0.311 2.00 12.00
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ROUTE CHN( 0512) |
| IN= 2----> OUT= 1 | Routing time step (min)= 5.00
-----

```

<----- DATA FOR SECTION ( 484.2) ----->

```

Surface Area (ha)= 2.65 1.25
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 161.25 40.00
Mannings n = 0.013 0.250
Max.Eff.Inten.(mm/hr)= 71.13 5.97
over (min)= 5.00 35.00
Storage Coeff. (min)= 3.90 (ii) 30.73 (ii)
Unit Hyd. Tpeak (min)= 5.00 35.00
Unit Hyd. peak (cms)= 0.25 0.04
*TOTALS*
PEAK FLOW (cms)= 0.34 0.01 0.337 (iii)
TIME TO PEAK (hrs)= 2.00 2.67 2.00
RUNOFF VOLUME (mm)= 18.78 3.69 12.28
TOTAL RAINFALL (mm)= 24.78 24.78 24.78
RUNOFF COEFFICIENT = 0.76 0.15 0.50

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0512): 4.70 0.118 2.25 11.93
+ ID2= 2 ( 5122): 3.90 0.337 2.00 12.28
=====
ID = 3 ( 0119): 8.60 0.364 2.00 12.09
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| ADD HYD ( 0120) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 0110): 265.34 2.824 2.17 7.90
+ ID2= 2 ( 0119): 8.60 0.364 2.00 12.09
=====
ID = 3 ( 0120): 273.94 3.092 2.17 8.03
-----

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

Distance Elevation Manning
0.00 80.80 0.0900
9.73 80.46 0.0900
14.10 82.04 0.0900
17.18 82.28 0.0900
41.13 82.12 0.0900 / 0.0700 Main Channel
46.88 79.71 0.0700 Main Channel
51.41 80.90 0.0700 / 0.0900 Main Channel
94.29 80.56 0.0900
175.64 80.72 0.0900
192.09 80.85 0.0900

```

```

----->
<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.13 79.84 .255E+02 0.0 0.14 54.71
0.26 79.98 .102E+03 0.0 0.23 34.47
0.40 80.11 .229E+03 0.1 0.30 26.30
0.53 80.24 .408E+03 0.3 0.36 21.71
0.66 80.37 .637E+03 0.6 0.42 18.71
0.79 80.51 .934E+03 0.9 0.46 16.84
0.93 80.64 .245E+04 1.6 0.31 24.96
1.06 80.77 .873E+04 4.6 0.25 31.51
1.19 80.90 .179E+05 11.4 0.30 26.08
1.32 81.04 .278E+05 22.6 0.38 20.45
1.46 81.17 .381E+05 37.5 0.46 16.91
1.60 81.31 .484E+05 55.4 0.54 14.57
1.74 81.45 .588E+05 76.0 0.61 12.90
1.87 81.59 .693E+05 99.3 0.67 11.63
2.01 81.72 .798E+05 125.0 0.73 10.64
2.15 81.86 .903E+05 153.1 0.80 9.83
2.29 82.00 .101E+06 183.5 0.85 9.16
2.42 82.14 .112E+06 214.3 0.90 8.68
2.56 82.27 .123E+06 244.4 0.93 8.40

```

```

----->
<---- hydrograph ----> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0117) 4.70 0.31 2.00 12.00 0.53 0.36
OUTFLOW: ID= 1 ( 0512) 4.70 0.12 2.25 11.93 0.36 0.27

```

```

-----
| CALIB |
| STANDHYD ( 5122) | Area (ha)= 3.90
| ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00
-----
IMPERVIOUS PERVIOUS (i)

```

```

-----
| CALIB |
| NASHYD ( 6011) | Area (ha)= 44.10 Curve Number (CN)= 62.0
| ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res.(N)= 3.00
| U.H. Tp(hrs)= 0.83
-----
Unit Hyd Qpeak (cms)= 2.027
PEAK FLOW (cms)= 0.092 (i)
TIME TO PEAK (hrs)= 3.250
RUNOFF VOLUME (mm)= 1.632
TOTAL RAINFALL (mm)= 24.775
RUNOFF COEFFICIENT = 0.066
(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

```

-----
| CALIB |
| STANDHYD ( 6012) | Area (ha)= 11.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 3.08 7.92
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 270.80 40.00
Mannings n = 0.013 0.250
Max.Eff.Inten.(mm/hr)= 71.13 2.45
over (min)= 5.00 45.00
Storage Coeff. (min)= 5.32 (ii) 43.60 (ii)
Unit Hyd. Tpeak (min)= 5.00 45.00
Unit Hyd. peak (cms)= 0.21 0.03
*TOTALS*
PEAK FLOW (cms)= 0.23 0.03 0.230 (iii)
TIME TO PEAK (hrs)= 2.00 2.92 2.00
RUNOFF VOLUME (mm)= 18.78 2.12 4.78
TOTAL RAINFALL (mm)= 24.78 24.78 24.78
RUNOFF COEFFICIENT = 0.76 0.09 0.19

```

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

TIME TO PEAK (hrs)= 2.00 2.92 2.00  
 RUNOFF VOLUME (mm)= 18.78 2.17 5.99  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.09 0.24

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0124)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6011): 44.10 0.092 3.25 1.63  
 + ID2= 2 ( 6012): 11.00 0.230 2.00 4.78  
 =====  
 ID = 3 ( 0124): 55.10 0.231 2.00 2.26

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6021) Area (ha)= 43.60 Curve Number (CN)= 62.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
 U.H. Tp(hrs)= 0.95

Unit Hyd Qpeak (cms)= 1.753  
 PEAK FLOW (cms)= 0.083 (i)  
 TIME TO PEAK (hrs)= 3.417  
 RUNOFF VOLUME (mm)= 1.632  
 TOTAL RAINFALL (mm)= 24.775  
 RUNOFF COEFFICIENT = 0.066

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) Area (ha)= 12.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.51	8.38
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	293.26	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	2.56
over (min)	5.00	45.00
Storage Coeff. (min)=	5.58 (ii)	43.22 (ii)
Unit Hyd. Tpeak (min)=	5.00	45.00
Unit Hyd. peak (cms)=	0.20	0.03
PEAK FLOW (cms)=	0.38	0.03
		*TOTALS* 0.378 (iii)

ADD HYD ( 0125)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6021): 43.60 0.083 3.42 1.63  
 + ID2= 2 ( 6022): 12.90 0.378 2.00 5.99  
 =====  
 ID = 3 ( 0125): 56.50 0.378 2.00 2.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0124): 55.10 0.231 2.00 2.26  
 + ID2= 2 ( 0125): 56.50 0.378 2.00 2.63  
 =====  
 ID = 3 ( 0126): 111.60 0.609 2.00 2.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2---> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400

118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0126)	111.60	0.61	2.00	2.45	0.50	0.20
OUTFLOW: ID= 1 ( 0603)	111.60	0.21	3.92	2.44	0.39	0.22

CALIB  
 NASHYD ( 0613) Area (ha)= 1.77 Curve Number (CN)= 66.0  
 ID= 1 DT= 5.0 min Ia (mm)= 8.00 # of Linear Res.(N)= 3.00

U.H. Tp(hrs)= 0.22

Unit Hyd Qpeak (cms)= 0.302  
 PEAK FLOW (cms)= 0.009 (i)  
 TIME TO PEAK (hrs)= 2.333  
 RUNOFF VOLUME (mm)= 1.904  
 TOTAL RAINFALL (mm)= 24.775  
 RUNOFF COEFFICIENT = 0.077

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6222) Area (ha)= 2.02  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	1.58	0.44
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	116.05	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	2.02
over (min)	5.00	45.00
Storage Coeff. (min)=	3.20 (ii)	44.61 (ii)
Unit Hyd. Tpeak (min)=	5.00	45.00
Unit Hyd. peak (cms)=	0.27	0.03

PEAK FLOW (cms)= 0.26 0.00 \*TOTALS\*  
 TIME TO PEAK (hrs)= 2.00 3.00 0.257 (iii)  
 RUNOFF VOLUME (mm)= 18.78 2.23 15.12  
 TOTAL RAINFALL (mm)= 24.78 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.09 0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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 ( 0614) Area (ha)= 1.50  
 ID= 1 DT= 5.0 min Total Imp(%)= 69.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.04	0.47	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	100.00	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	7.57	
over (min)	5.00	30.00	
Storage Coeff. (min)=	2.93 (ii)	27.32 (ii)	
Unit Hyd. Tpeak (min)=	5.00	30.00	
Unit Hyd. peak (cms)=	0.28	0.04	
PEAK FLOW (cms)=	0.13	0.01	0.126 (iii)
TIME TO PEAK (hrs)=	2.00	2.58	2.00
RUNOFF VOLUME (mm)=	18.78	3.50	11.13
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.14	0.45

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.67	0.47	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	119.44	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	2.02	
over (min)	5.00	45.00	
Storage Coeff. (min)=	3.26 (ii)	44.66 (ii)	
Unit Hyd. Tpeak (min)=	5.00	45.00	
Unit Hyd. peak (cms)=	0.27	0.03	
PEAK FLOW (cms)=	0.27	0.00	0.271 (iii)
TIME TO PEAK (hrs)=	2.00	3.00	2.00
RUNOFF VOLUME (mm)=	18.78	2.23	15.12

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.81	0.05	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	75.72	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	2.52	
over (min)	5.00	10.00	
Storage Coeff. (min)=	2.48 (ii)	5.79 (ii)	
Unit Hyd. Tpeak (min)=	5.00	10.00	
Unit Hyd. peak (cms)=	0.29	0.15	
PEAK FLOW (cms)=	0.14	0.00	0.142 (iii)
TIME TO PEAK (hrs)=	2.00	2.17	2.00
RUNOFF VOLUME (mm)=	18.78	1.70	17.75
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.07	0.72

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.80	0.51	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	124.10	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	26.77	
over (min)	5.00	20.00	
Storage Coeff. (min)=	3.33 (ii)	18.05 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.26	0.06	
PEAK FLOW (cms)=	0.19	0.02	0.189 (iii)
TIME TO PEAK (hrs)=	2.00	2.33	2.00
RUNOFF VOLUME (mm)=	18.78	6.48	12.62
TOTAL RAINFALL (mm)=	24.78	24.78	24.78

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.09	0.61

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.9 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 0618)	1.49	78.00	50.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.16	0.33	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	99.67	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	18.35	
over (min)	5.00	25.00	
Storage Coeff. (min)=	2.92 (ii)	20.04 (ii)	
Unit Hyd. Tpeak (min)=	5.00	25.00	
Unit Hyd. peak (cms)=	0.28	0.05	
PEAK FLOW (cms)=	0.13	0.01	0.126 (iii)
TIME TO PEAK (hrs)=	2.00	2.42	2.00
RUNOFF VOLUME (mm)=	18.78	5.21	11.98
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.21	0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6302)	0.86	94.00	94.00
ID= 1 DT= 5.0 min			

RUNOFF COEFFICIENT =	0.76	0.26	0.51
----------------------	------	------	------

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 69.7 Ia = Dep. 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 ( 0290)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0614):	1.50	0.126	2.00	11.13
+ ID2= 2 ( 0615):	2.14	0.271	2.00	15.12
=====				
ID = 3 ( 0290):	3.64	0.397	2.00	13.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0290):	3.64	0.397	2.00	13.48
+ ID2= 2 ( 0617):	2.31	0.189	2.00	12.62
=====				
ID = 1 ( 0290):	5.95	0.586	2.00	13.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0290):	5.95	0.586	2.00	13.14
+ ID2= 2 ( 0618):	1.49	0.126	2.00	11.98
=====				
ID = 3 ( 0290):	7.44	0.712	2.00	12.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)			
-----------------	--	--	--

3 + 2 = 1	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0290):	7.44	0.712	2.00	13.91
+ ID2= 2 ( 6222):	2.02	0.257	2.00	15.12
=====				
ID = 1 ( 0290):	9.46	0.969	2.00	13.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0290)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0290):	9.46	0.969	2.00	13.38
+ ID2= 2 ( 6302):	0.86	0.142	2.00	17.75
=====				
ID = 3 ( 0290):	10.32	1.112	2.00	13.75

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 6212)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		1.15	65.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.75	0.40		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	87.56	40.00		
Mannings n =	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	71.13	1.44		
over (min)	5.00	55.00		
Storage Coeff. (min)=	2.70 (ii)	50.03 (ii)		
Unit Hyd. Tpeak (min)=	5.00	55.00		
Unit Hyd. peak (cms)=	0.29	0.02		
				*TOTALS*
PEAK FLOW (cms)=	0.13	0.00	0.129 (iii)	
TIME TO PEAK (hrs)=	2.00	3.17	2.00	
RUNOFF VOLUME (mm)=	18.78	1.70	12.77	
TOTAL RAINFALL (mm)=	24.78	24.78	24.78	
RUNOFF COEFFICIENT =	0.76	0.07	0.52	

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. 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 ( 6232)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		0.85	65.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.55	0.30		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	75.28	40.00		
Mannings n =	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	71.13	1.44		
over (min)	5.00	50.00		
Storage Coeff. (min)=	2.47 (ii)	49.79 (ii)		
Unit Hyd. Tpeak (min)=	5.00	50.00		
Unit Hyd. peak (cms)=	0.29	0.02		
				*TOTALS*
PEAK FLOW (cms)=	0.10	0.00	0.097 (iii)	
TIME TO PEAK (hrs)=	2.00	3.08	2.00	
RUNOFF VOLUME (mm)=	18.78	1.70	12.76	
TOTAL RAINFALL (mm)=	24.78	24.78	24.78	
RUNOFF COEFFICIENT =	0.76	0.07	0.52	

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0288)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6212):	1.15	0.129	2.00	12.77
+ ID2= 2 ( 6232):	0.85	0.097	2.00	12.76
=====				
ID = 3 ( 0288):	2.00	0.226	2.00	12.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	STANDHYD ( 0626)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		0.96	60.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.58	0.38		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	80.00	40.00		
Mannings n =	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	71.13	3.49		
over (min)	5.00	40.00		
Storage Coeff. (min)=	2.56 (ii)	35.80 (ii)		
Unit Hyd. Tpeak (min)=	5.00	40.00		
Unit Hyd. peak (cms)=	0.29	0.03		
				*TOTALS*
PEAK FLOW (cms)=	0.10	0.00	0.101 (iii)	
TIME TO PEAK (hrs)=	2.00	2.83	2.00	
RUNOFF VOLUME (mm)=	18.78	3.33	12.58	
TOTAL RAINFALL (mm)=	24.78	24.78	24.78	
RUNOFF COEFFICIENT =	0.76	0.13	0.51	

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0297)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0288):	2.00	0.226	2.00	12.77
+ ID2= 2 ( 0290):	10.32	1.112	2.00	13.75
=====				
ID = 3 ( 0297):	12.32	1.338	2.00	13.59

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
3 + 2 = 1				
ID1= 3 ( 0297):	12.32	1.338	2.00	13.59

+ ID2= 2 ( 0613):	1.77	0.009	2.33	1.90
=====				
ID = 1 ( 0297):	14.09	1.339	2.00	12.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0297)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0297):	14.09	1.339	2.00	12.12
+ ID2= 2 ( 0626):	0.96	0.101	2.00	12.58
=====				
ID = 3 ( 0297):	15.05	1.440	2.00	12.15

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR ( 0302)	IN= 2--> OUT= 1	DT= 5.0 min	OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
			0.0000	0.0000	0.1070	0.3146
			0.0150	0.1715	0.7100	0.8031

INFLOW : ID= 2 ( 0297)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
15.050	1.440	2.00	12.15	
OUTFLOW: ID= 1 ( 0302)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
15.050	0.015	4.08	11.96	

PEAK FLOW REDUCTION [Qout/Qin](%)= 1.04  
TIME SHIFT OF PEAK FLOW (min)=125.00  
MAXIMUM STORAGE USED (ha.m.)= 0.1715

CALIB	STANDHYD ( 6202)	Area (ha)=	Dir. Conn.(%)=
ID= 1 DT= 5.0 min		1.26	94.00

		IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.18	0.08		
Dep. Storage (mm)=	6.00	8.00		
Average Slope (%)=	1.00	1.00		
Length (m)=	91.65	40.00		
Mannings n =	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	71.13	2.52		
over (min)	5.00	10.00		

Storage Coeff. (min)= 2.78 (ii) 6.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.28 0.15

PEAK FLOW (cms)= 0.20 0.00  
 TIME TO PEAK (hrs)= 2.00 2.17  
 RUNOFF VOLUME (mm)= 18.78 1.70  
 TOTAL RAINFALL (mm)= 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0292) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.0580	0.0848
0.0090	0.0366	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1.260	0.202	2.00	17.75
1.260	0.005	3.92	16.93

INFLOW : ID= 2 ( 6202)  
 OUTFLOW: ID= 1 ( 0292)

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.35  
 TIME SHIFT OF PEAK FLOW (min)=115.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0193

CALIB |  
 STANDHYD ( 0606) | Area (ha)= 1.98  
 ID= 1 DT= 5.0 min | Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 1.29	0.69
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 114.89	40.00
Mannings n = 0.013	0.250

Max.Eff.Inten.(mm/hr)= 71.13 1.44

(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RESERVOIR( 0295) | OVERFLOW IS OFF  
 IN= 2----> OUT= 1  
 DT= 5.0 min

OUTFLOW (cms)	STORAGE (ha.m.)	OUTFLOW (cms)	STORAGE (ha.m.)
0.0000	0.0000	0.1000	0.1464
0.0159	0.0631	0.0000	0.0000

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
2.180	0.332	2.00	17.75
2.180	0.008	3.92	17.29

INFLOW : ID= 2 ( 0612)  
 OUTFLOW: ID= 1 ( 0295)

PEAK FLOW REDUCTION [Qout/Qin](%)= 2.53  
 TIME SHIFT OF PEAK FLOW (min)=115.00  
 MAXIMUM STORAGE USED (ha.m.)= 0.0334

ADD HYD ( 0306) |  
 1 + 2 = 3 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0292):	1.26	0.005	3.92	16.93
+ ID2= 2 ( 0295):	2.18	0.008	3.92	17.29
=====				
ID = 3 ( 0306):	3.44	0.013	3.92	17.16

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0306) |  
 3 + 2 = 1 |

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0306):	3.44	0.013	3.92	17.16
+ ID2= 2 ( 0606):	1.98	0.210	2.00	12.78
=====				
ID = 1 ( 0306):	5.42	0.213	2.00	15.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0304) |  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

over (min) 5.00 55.00  
 Storage Coeff. (min)= 3.18 (ii) 50.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 55.00  
 Unit Hyd. peak (cms)= 0.27 0.02

PEAK FLOW (cms)= 0.21 0.00  
 TIME TO PEAK (hrs)= 2.00 3.17  
 RUNOFF VOLUME (mm)= 18.78 1.70  
 TOTAL RAINFALL (mm)= 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. 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 ( 0612) | Area (ha)= 2.18  
 ID= 1 DT= 5.0 min | Total Imp(%)= 94.00 Dir. Conn.(%)= 94.00

IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)= 2.05	0.13
Dep. Storage (mm)= 6.00	8.00
Average Slope (%)= 1.00	1.00
Length (m)= 120.55	40.00
Mannings n = 0.013	0.250

Max.Eff.Inten.(mm/hr)= 71.13 2.52  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.28 (ii) 6.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.27 0.14

PEAK FLOW (cms)= 0.33 0.00  
 TIME TO PEAK (hrs)= 2.00 2.17  
 RUNOFF VOLUME (mm)= 18.78 1.70  
 TOTAL RAINFALL (mm)= 24.78 24.78  
 RUNOFF COEFFICIENT = 0.76 0.07

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 63.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.

Distance	Elevation	Manning
0.00	92.50	0.0700
36.57	92.00	0.0700
90.03	91.00	0.0700
124.58	90.00	0.0700 / 0.0350
128.34	89.59	0.0350
129.84	89.59	0.0350
132.39	90.00	0.0350 / 0.0700
163.76	91.00	0.0700
187.47	91.00	0.0700
203.83	91.00	0.0700
306.44	92.00	0.0700

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	89.69	.215E+03	0.1	0.46	33.36
0.20	89.79	.579E+03	0.4	0.67	22.75
0.31	89.90	.109E+04	1.0	0.84	18.13
0.41	90.00	.175E+04	1.9	0.99	15.37
0.54	90.13	.324E+04	4.0	1.14	13.36
0.68	90.27	.581E+04	7.3	1.15	13.32
0.81	90.40	.945E+04	11.9	1.15	13.29
0.94	90.53	.142E+05	18.0	1.17	13.10
1.08	90.67	.200E+05	26.0	1.19	12.79
1.21	90.80	.268E+05	36.0	1.23	12.42
1.34	90.93	.348E+05	48.2	1.27	12.03
1.48	91.07	.464E+05	58.3	1.15	13.27
1.61	91.20	.629E+05	78.8	1.15	13.30
1.74	91.33	.819E+05	104.3	1.17	13.08
1.88	91.47	.103E+06	135.3	1.20	12.74
2.01	91.60	.128E+06	172.1	1.24	12.35
2.14	91.73	.154E+06	215.1	1.28	11.94
2.28	91.87	.183E+06	264.7	1.32	11.54
2.41	92.00	.215E+06	321.3	1.37	11.15

<---- hydrograph ----> <-pipe / channel->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0306)	5.42	0.21	2.00	15.56	0.14
OUTFLOW: ID= 1 ( 0304)	5.42	0.06	2.25	15.55	0.05

CALIB |  
 STANDHYD ( 0616) | Area (ha)= 0.44  
 ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.34	0.10	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	54.16	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	3.49	
over (min)	5.00	40.00	
Storage Coeff. (min)=	2.03 (ii)	35.27 (ii)	
Unit Hyd. Tpeak (min)=	5.00	40.00	
Unit Hyd. peak (cms)=	0.31	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.06	0.00	0.063 (iii)
TIME TO PEAK (hrs)=	2.00	2.83	2.00
RUNOFF VOLUME (mm)=	18.78	3.33	15.33
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.13	0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 6102)	Area (ha)= 2.49
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00 Dir. Conn.(%)= 50.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.94	0.55	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	128.84	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	38.37	
over (min)	5.00	20.00	
Storage Coeff. (min)=	3.41 (ii)	16.15 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.26	0.06	
			*TOTALS*
PEAK FLOW (cms)=	0.20	0.03	0.204 (iii)
TIME TO PEAK (hrs)=	2.00	2.33	2.00
RUNOFF VOLUME (mm)=	18.78	8.97	13.87
TOTAL RAINFALL (mm)=	24.78	24.78	24.78

RUNOFF COEFFICIENT = 0.76 0.36 0.56

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.3 Ia = Dep. 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 ( 0624)	Area (ha)= 0.89
ID= 1 DT= 5.0 min	Total Imp(%)= 78.00 Dir. Conn.(%)= 78.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	0.69	0.20	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	77.03	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	3.49	
over (min)	5.00	40.00	
Storage Coeff. (min)=	2.50 (ii)	35.75 (ii)	
Unit Hyd. Tpeak (min)=	5.00	40.00	
Unit Hyd. peak (cms)=	0.29	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.12	0.00	0.122 (iii)
TIME TO PEAK (hrs)=	2.00	2.83	2.00
RUNOFF VOLUME (mm)=	18.78	3.33	15.35
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.13	0.62

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 78.9 Ia = Dep. 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 ( 0286)	
1 + 2 = 3	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
ID1= 1 ( 6102):	2.49 0.204 2.00 13.87

+ ID2= 2 ( 0616):	0.44	0.063	2.00	15.33
=====				
ID = 3 ( 0286):	2.93	0.267	2.00	14.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0286)	
3 + 2 = 1	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
ID1= 3 ( 0286):	2.93 0.267 2.00 14.09
+ ID2= 2 ( 0624):	0.89 0.122 2.00 15.35
=====	
ID = 1 ( 0286):	3.82 0.389 2.00 14.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

RESERVOIR( 0305)	OVERFLOW IS OFF
IN= 2---> OUT= 1	
DT= 5.0 min	
	OUTFLOW STORAGE   OUTFLOW STORAGE
	(cms) (ha.m.)   (cms) (ha.m.)
	0.0000 0.0000   0.1760 0.2330
	0.0280 0.0927   0.0000 0.0000
	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
INFLOW : ID= 2 ( 0286)	3.820 0.389 2.00 14.38
OUTFLOW: ID= 1 ( 0305)	3.820 0.014 3.92 14.16

PEAK FLOW REDUCTION [Qout/Qin](%)= 3.55  
TIME SHIFT OF PEAK FLOW (min)=115.00  
MAXIMUM STORAGE USED (ha.m.)= 0.0458

CALIB	
STANDHYD ( 0619)	Area (ha)= 1.64
ID= 1 DT= 5.0 min	Total Imp(%)= 65.00 Dir. Conn.(%)= 65.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	1.07	0.57	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	104.56	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	71.13	4.69	
over (min)	5.00	35.00	

Storage Coeff. (min)=	3.01 (ii)	32.55 (ii)	
Unit Hyd. Tpeak (min)=	5.00	35.00	
Unit Hyd. peak (cms)=	0.28	0.03	
			*TOTALS*
PEAK FLOW (cms)=	0.18	0.00	0.178 (iii)
TIME TO PEAK (hrs)=	2.00	2.75	2.00
RUNOFF VOLUME (mm)=	18.78	4.09	13.62
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.17	0.55

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 83.0 Ia = Dep. 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 ( 0293)	
1 + 2 = 3	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
ID1= 1 ( 0302):	15.05 0.015 4.08 11.96
+ ID2= 2 ( 0304):	5.42 0.057 2.25 15.55
=====	
ID = 3 ( 0293):	20.47 0.067 2.33 12.91

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	
3 + 2 = 1	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
ID1= 3 ( 0293):	20.47 0.067 2.33 12.91
+ ID2= 2 ( 0305):	3.82 0.014 3.92 14.16
=====	
ID = 1 ( 0293):	24.29 0.076 2.33 13.11

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0293)	
1 + 2 = 3	AREA QPEAK TPEAK R.V.
	(ha) (cms) (hrs) (mm)
ID1= 1 ( 0293):	24.29 0.076 2.33 13.11
+ ID2= 2 ( 0619):	1.64 0.178 2.00 13.62

=====  
 ID = 3 ( 0293): 25.93 0.204 2.00 13.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6032) Area (ha)= 29.63  
 ID= 1 DT= 5.0 min Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	13.93	15.70	
Dep. Storage (mm)=	1.50	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	444.45	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	52.91	5.52	
over (min)	10.00	40.00	
Storage Coeff. (min)=	8.07 (ii)	35.74 (ii)	
Unit Hyd. Tpeak (min)=	10.00	40.00	
Unit Hyd. peak (cms)=	0.13	0.03	
			*TOTALS*
PEAK FLOW (cms)=	1.08	0.12	1.091 (iii)
TIME TO PEAK (hrs)=	2.08	2.75	2.08
RUNOFF VOLUME (mm)=	23.28	3.60	9.89
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.94	0.15	0.40

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 0128)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0293):	25.93	0.204	2.00	13.14
+ ID2= 2 ( 0603):	111.60	0.212	3.92	2.44
ID = 3 ( 0128):	137.53	0.273	3.83	4.46

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
 3 + 2 = 1

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 3 ( 0128):	137.53	0.273	3.83	4.46
+ ID2= 2 ( 6032):	29.63	1.091	2.08	9.89
ID = 1 ( 0128):	167.16	1.333	2.08	5.42

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

DATA FOR SECTION (1414.9)

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63

1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<--- hydrograph ---> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0128)	167.16	1.33	2.08	5.42	1.67	0.09
OUTFLOW: ID= 1 ( 0604)	167.16	0.42	2.33	5.42	1.23	0.10

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
 STANDHYD ( 6042) Area (ha)= 24.00  
 ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)	
Surface Area (ha)=	18.72	5.28	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	400.00	40.00	
Mannings n =	0.013	0.250	
Max.Eff.Inten.(mm/hr)=	52.91	10.47	
over (min)	10.00	30.00	
Storage Coeff. (min)=	7.57 (ii)	29.00 (ii)	
Unit Hyd. Tpeak (min)=	10.00	30.00	
Unit Hyd. peak (cms)=	0.13	0.04	
			*TOTALS*
PEAK FLOW (cms)=	1.72	0.08	1.738 (iii)
TIME TO PEAK (hrs)=	2.08	2.58	2.08
RUNOFF VOLUME (mm)=	18.78	5.44	14.64
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.22	0.59

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.

(iii) PEAK FLOWS DO NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0130)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0604):	167.16	0.418	2.33	5.42
+ ID2= 2 ( 6042):	24.00	1.738	2.08	14.64
ID = 3 ( 0130):	191.16	2.016	2.08	6.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

DATA FOR SECTION ( 801.4)

Distance	Elevation	Manning	
0.00	82.95	0.1100	
3.78	82.95	0.1100	
9.24	82.49	0.1100	
50.67	82.10	0.1100	
105.12	82.17	0.1100	
119.34	81.56	0.1100	
150.67	81.66	0.1100	
157.23	82.37	0.1100	
190.03	82.57	0.1100	
223.75	82.27	0.1100	
252.32	82.50	0.1100	
254.65	81.95	0.1100 / 0.0700	Main Channel
258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67

0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<--- hydrograph ---> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.16	2.02	2.08	6.57	0.83	0.26
OUTFLOW: ID= 1 ( 0605)	191.16	0.81	2.75	6.57	0.71	0.28

CN\* = 75.0 Ia = Dep. 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 ( 0139)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0605):	191.16	0.807	2.75	6.57
+ ID2= 2 ( 6112):	11.40	0.918	2.00	13.31
=====				
ID = 3 ( 0139):	202.56	1.048	2.08	6.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6052)	15.90	74.00	65.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.77	4.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	325.58	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	4.91
over (min)	5.00	35.00
Storage Coeff. (min)=	5.94 (ii)	34.95 (ii)
Unit Hyd. Tpeak (min)=	5.00	35.00
Unit Hyd. peak (cms)=	0.19	0.03
*TOTALS*		
PEAK FLOW (cms)=	1.27	0.03
TIME TO PEAK (hrs)=	2.00	2.67
RUNOFF VOLUME (mm)=	18.78	3.06
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.12
		0.54

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 6112)	11.40	72.00	62.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	8.21	3.19
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	275.68	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	7.98
over (min)	5.00	30.00
Storage Coeff. (min)=	5.38 (ii)	29.27 (ii)
Unit Hyd. Tpeak (min)=	5.00	30.00
Unit Hyd. peak (cms)=	0.21	0.04
*TOTALS*		
PEAK FLOW (cms)=	0.92	0.04
TIME TO PEAK (hrs)=	2.00	2.58
RUNOFF VOLUME (mm)=	18.78	4.39
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.18
		0.54

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

ADD HYD ( 0132)

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0139):	202.56	1.048	2.08	6.95
+ ID2= 2 ( 6052):	15.90	1.269	2.00	13.27
=====				
ID = 3 ( 0132):	218.46	2.272	2.00	7.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)

	Routing time step (min)
IN= 2--> OUT= 1	5.00

DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29

1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<--- hydrograph ---> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.46	2.27	2.00	7.41	0.44	0.51
OUTFLOW: ID= 1 ( 0530)	218.46	1.28	2.33	7.41	0.34	0.37

CALIB

	Area (ha)	Total Imp(%)	Dir. Conn.(%)
STANDHYD ( 5302)	5.80	66.00	56.00
ID= 1 DT= 5.0 min			

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.83	1.97
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	196.64	40.00
Mannings n =	0.013	0.250
Max.Eff.Inten.(mm/hr)=	71.13	4.08
over (min)	5.00	40.00
Storage Coeff. (min)=	4.39 (ii)	35.64 (ii)
Unit Hyd. Tpeak (min)=	5.00	40.00
Unit Hyd. peak (cms)=	0.23	0.03
*TOTALS*		
PEAK FLOW (cms)=	0.47	0.01
TIME TO PEAK (hrs)=	2.00	2.75
RUNOFF VOLUME (mm)=	18.78	2.89
TOTAL RAINFALL (mm)=	24.78	24.78
RUNOFF COEFFICIENT =	0.76	0.12
		0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL



THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

91.35	77.38	0.0700 /0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

ADD HYD ( 0134)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.46	1.279	2.33	7.41
+ ID2= 2 ( 5302):	5.80	0.466	2.00	11.78
=====				
ID = 3 ( 0134):	224.26	1.423	2.25	7.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.94	3.092	2.17	8.03
+ ID2= 2 ( 0134):	224.26	1.423	2.25	7.52
=====				
ID = 3 ( 0135):	498.20	4.473	2.17	7.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)	
IN= 2---> OUT= 1	
Routing time step (min)'= 5.00	

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 /0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel

<----- TRAVEL TIME TABLE ----->						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.16	76.44	.113E+03	0.0	0.14	88.10	
0.32	76.60	.451E+03	0.1	0.23	55.50	
0.49	76.76	.101E+04	0.4	0.30	42.35	
0.65	76.92	.180E+04	0.9	0.37	34.57	
0.81	77.09	.276E+04	1.6	0.44	28.86	
0.97	77.25	.388E+04	2.7	0.52	24.37	
1.14	77.41	.516E+04	4.0	0.59	21.56	
1.30	77.57	.660E+04	5.7	0.66	19.26	
1.46	77.74	.822E+04	7.8	0.72	17.67	
1.62	77.90	.100E+05	10.1	0.77	16.48	
1.79	78.06	.120E+05	12.8	0.82	15.54	
1.95	78.22	.141E+05	15.9	0.87	14.74	
2.11	78.39	.163E+05	19.4	0.91	14.06	
2.27	78.55	.187E+05	23.2	0.95	13.47	
2.44	78.71	.212E+05	27.3	0.99	12.95	
2.60	78.87	.239E+05	31.9	1.02	12.50	
2.76	79.04	.267E+05	36.8	1.06	12.10	
2.92	79.20	.320E+05	39.4	0.94	13.56	
3.09	79.36	.409E+05	45.7	0.85	14.94	

<--- hydrograph --->						<-pipe / channel->	
	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW: ID= 2 ( 0135)	498.20	4.47	2.17	7.80	1.18	0.61	
OUTFLOW: ID= 1 ( 0507)	498.20	3.09	2.58	7.80	1.02	0.54	

CALIB			
STANDHYD ( 5072)			
ID= 1 DT= 5.0 min			
Area (ha)=	48.90		
Total Imp(%)=	50.00	Dir. Conn.(%)=	36.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	24.45		24.45		
Dep. Storage (mm)=	6.00		8.00		
Average Slope (%)=	1.00		1.00		
Length (m)=	570.96		40.00		
Mannings n	=	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	52.91		5.98		

over (min)	10.00	40.00	
Storage Coeff. (min)=	9.37 (ii)	36.19 (ii)	
Unit Hyd. Tpeak (min)=	10.00	40.00	
Unit Hyd. peak (cms)=	0.12	0.03	
*TOTALS*			
PEAK FLOW (cms)=	1.63	0.20	1.652 (iii)
TIME TO PEAK (hrs)=	2.08	2.75	2.08
RUNOFF VOLUME (mm)=	18.78	3.89	9.25
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT	=	0.76	0.37

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

TIME TO PEAK (hrs)=	2.00	2.75	2.00
RUNOFF VOLUME (mm)=	18.78	2.91	8.46
TOTAL RAINFALL (mm)=	24.78	24.78	24.78
RUNOFF COEFFICIENT	=	0.76	0.34

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STORE HYD( 1505)		
ID= 1 DT= 5.0min		
AREA (ha)=	30.00	
QPEAK (cms)=	0.78	
TPEAK (hrs)=	15.58	
VOLUME (mm)=	402.14	

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
hrs	cms	hrs	cms	hrs	cms	hrs	cms	hrs	cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26	125.33	0.16
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26	125.42	0.16
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25	125.50	0.16
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25	125.58	0.16
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25	125.67	0.17
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25	125.75	0.16
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25	125.83	0.16
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25	125.92	0.17
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24	126.00	0.15
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25	126.08	0.16
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24	126.17	0.16
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25	126.25	0.16
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25	126.33	0.16
1.08	0.00	32.42	0.10	63.75	0.24	95.08	0.25	126.42	0.16
1.17	0.00	32.50	0.10	63.83	0.23	95.17	0.24	126.50	0.17
1.25	0.00	32.58	0.10	63.92	0.23	95.25	0.21	126.58	0.16
1.33	0.00	32.67	0.10	64.00	0.23	95.33	0.25	126.67	0.16
1.42	0.00	32.75	0.10	64.08	0.23	95.42	0.22	126.75	0.17
1.50	0.00	32.83	0.10	64.17	0.23	95.50	0.23	126.83	0.17
1.58	0.00	32.92	0.10	64.25	0.24	95.58	0.22	126.92	0.17
1.67	0.00	33.00	0.10	64.33	0.23	95.67	0.24	127.00	0.17
1.75	0.00	33.08	0.10	64.42	0.23	95.75	0.26	127.08	0.17
1.83	0.00	33.17	0.10	64.50	0.23	95.83	0.24	127.17	0.18
1.92	0.00	33.25	0.11	64.58	0.23	95.92	0.23	127.25	0.17
2.00	0.00	33.33	0.11	64.67	0.24	96.00	0.24	127.33	0.18
2.08	0.00	33.42	0.11	64.75	0.24	96.08	0.24	127.42	0.18
2.17	0.00	33.50	0.11	64.83	0.24	96.17	0.24	127.50	0.16
2.25	0.00	33.58	0.11	64.92	0.24	96.25	0.24	127.58	0.18
2.33	0.00	33.67	0.11	65.00	0.24	96.33	0.24	127.67	0.17

ADD HYD ( 0122)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0507):	498.20	3.094	2.58	7.80
+ ID2= 2 ( 5072):	48.90	1.652	2.08	9.25
=====				
ID = 3 ( 0122):	547.10	3.823	2.42	7.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB			
STANDHYD ( 5402)			
ID= 1 DT= 5.0 min			
Area (ha)=	9.40		
Total Imp(%)=	50.00	Dir. Conn.(%)=	35.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	4.70		4.70		
Dep. Storage (mm)=	6.00		8.00		
Average Slope (%)=	1.00		1.00		
Length (m)=	250.33		40.00		
Mannings n	=	0.013	0.250		
Max.Eff.Inten.(mm/hr)=	71.13		4.13		
over (min)	5.00		40.00		
Storage Coeff. (min)=	5.08 (ii)		36.18 (ii)		
Unit Hyd. Tpeak (min)=	5.00		40.00		
Unit Hyd. peak (cms)=	0.21		0.03		
*TOTALS*					
PEAK FLOW (cms)=	0.44		0.03		0.441 (iii)









# Ultimate - SCUBE

```

=====
V V I SSSS U U A L (v 6.2.2018)
V V I SS U U A A L
V V I SS U U A A A A L
V V I SS U U A A L
W I SSSS UUUU A A LLLL

000 TTTT TTTT H H Y Y M M 000 TM
O O T T H H Y Y M M O O
O O T T H H Y Y M M O O
000 T T H H Y Y M M 000

Developed and Distributed by Smart City Water Inc
Copyright 2007 - 2022 Smart City Water Inc
All rights reserved.
    
```

\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

```

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
f40dba5f-bcd5-4251-a5fe-6ae899643429\
Summary filename:
C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\
f40dba5f-bcd5-4251-a5fe-6ae899643429\
    
```

```

DATE: 04-10-2024 TIME: 01:25:37

USER:
    
```

```

COMMENTS:

*****
** SIMULATION : 100yrHope_SCSII_6hr.stm **
*****
    
```

```

| READ STORM | Filename: C:\Users\jannaormond\AppData\Local\Temp\
    
```

```

PEAK FLOW (cms) = 3.787 (i)
TIME TO PEAK (hrs) = 3.833
RUNOFF VOLUME (mm) = 38.043
TOTAL RAINFALL (mm) = 101.620
RUNOFF COEFFICIENT = 0.374
    
```

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| CALIB |
| STANDHYD ( 5012) | Area (ha) = 39.40
| ID= 1 DT= 5.0 min | Total Imp(%) = 38.00 Dir. Conn.(%) = 24.00
    
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha) = 14.97 24.43
Dep. Storage (mm) = 6.00 8.00
Average Slope (%) = 1.00 1.00
Length (m) = 512.51 40.00
Mannings n = 0.013 0.250
    
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr) = 159.59 107.14
over (min) = 5.00 15.00
Storage Coeff. (min) = 5.65 (ii) 14.10 (ii)
Unit Hyd. Tpeak (min) = 5.00 15.00
    
```

```

| Ptotal=101.62 mm | 5b66f7bc-e58d-45d3-b0f6-6b3e1edcbf8b\ff8cc32c
| Comments: Mount Hope-6 hour SCS Distribution Desig
    
```

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	4.09	1.50	10.23	3.00	22.51	4.50	6.14
0.17	4.09	1.67	10.23	3.17	22.51	4.67	6.14
0.33	4.09	1.83	10.23	3.33	22.51	4.83	6.14
0.50	6.14	2.00	12.28	3.50	10.23	5.00	4.09
0.67	6.14	2.17	12.28	3.67	10.23	5.17	4.09
0.83	6.14	2.33	12.28	3.83	10.23	5.33	4.09
1.00	6.14	2.50	61.38	4.00	8.18	5.50	4.09
1.17	6.14	2.67	110.48	4.17	8.18	5.67	4.09
1.33	6.14	2.83	159.59	4.33	8.18		

```

| CALIB |
| NASHYD ( 5011) | Area (ha) = 80.20 Curve Number (CN) = 65.0
| ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00
| U.H. Tp(hrs) = 0.85
    
```

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Unit Hyd Qpeak (cms) = 3.621

```

Unit Hyd. peak (cms) = 0.20 0.08
*TOTALS*
PEAK FLOW (cms) = 3.93 4.06 7.301 (iii)
TIME TO PEAK (hrs) = 3.00 3.08 3.00
RUNOFF VOLUME (mm) = 95.62 43.76 56.20
TOTAL RAINFALL (mm) = 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.43 0.55
    
```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
| (ha) (cms) (hrs) (mm)
ID1= 1 ( 5011): 80.20 3.787 3.83 38.04
+ ID2= 2 ( 5012): 39.40 7.301 3.00 56.20
-----
ID = 3 ( 0100): 119.60 8.229 3.00 44.03
    
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0502) |
| IN= 2--> OUT= 1 | Routing time step (min) = 5.00
    
```

<----- DATA FOR SECTION (1537.5) ----->			
Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	
101.34	88.18	0.1100	
113.53	88.23	0.1100	
128.57	88.32	0.1100	
142.19	88.61	0.1100	

155.81 88.53 0.1100  
 183.05 88.85 0.1100  
 187.19 88.84 0.1100  
 211.21 88.88 0.1100

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

----- hydrograph ----- <-pipe / channel-->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0100)	119.60	8.23	3.00	44.03	1.25
OUTFLOW: ID= 1 ( 0502)	119.60	5.08	3.83	44.02	1.13

CALIB  
 STANDHYD ( 5022)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 51.10  
 Total Imp(%)= 48.00  
 Dir. Conn.(%)= 34.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 24.53 26.57  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 583.67 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

+ ID2= 2 ( 5022): 51.10 10.662 3.00 61.55  
 ID = 3 ( 0102): 170.70 13.583 3.00 49.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2--> OUT= 1  
 Routing time step (min)= 5.00

----- DATA FOR SECTION (1157.9) -----

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 / 0.0700 Main Channel
127.36	84.21	0.0700 Main Channel
128.86	84.21	0.0700 Main Channel
130.86	85.21	0.0700 / 0.0900 Main Channel
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

----- TRAVEL TIME TABLE -----

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 105.55  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 6.11 (ii) 14.61 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.19 0.08

PEAK FLOW (cms)= 7.13 4.26 10.662 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 100.12 41.68 61.55  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.99 0.41 0.61

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0102)  
 1 + 2 = 3  
 ID1= 1 ( 0502): AREA (ha) 119.60 QPEAK (cms) 5.084 TPEAK (hrs) 3.83 R.V. (mm) 44.02

2.86 87.07 .168E+05 43.1 0.96 6.48  
 3.07 87.28 .297E+05 67.7 0.85 7.30  
 3.28 87.49 .456E+05 103.1 0.84 7.38  
 3.48 87.69 .663E+05 159.6 0.89 6.93  
 3.69 87.90 .907E+05 223.4 0.92 6.77

----- hydrograph ----- <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 170.70 13.58 3.00 49.27 1.82 1.35  
 OUTFLOW: ID= 1 ( 0503) 170.70 12.35 3.08 49.27 1.75 1.32

CALIB  
 STANDHYD ( 5032)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 13.80  
 Total Imp(%)= 76.00  
 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.49 3.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		

1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 145.90  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 4.12 (ii) 8.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.24 0.12

PEAK FLOW (cms)= 3.98 0.96  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 53.59  
 TOTAL RAINFALL (mm)= 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.53

\*TOTALS\*  
 4.940 (iii)  
 3.00  
 81.75  
 101.62  
 0.80

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0503):	170.70	12.355	3.08	49.27
+ ID2= 2 ( 5032):	13.80	4.940	3.00	81.75
ID = 3 ( 0104):	184.50	16.520	3.00	51.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel

	243.24	83.87	0.0700	Main Channel
	257.77	84.06	0.0900	
	312.01	83.52	0.0900	
	415.18	83.86	0.0900	
	461.15	83.40	0.0900	
	501.83	83.53	0.0900	
	513.93	82.96	0.0900	
	526.85	83.23	0.0900	
	569.63	83.21	0.0900	
	610.76	83.63	0.0900	
	663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	184.50	16.52	3.00	51.70	0.92	0.40
OUTFLOW: ID= 1 ( 0504)	184.50	12.78	3.17	51.70	0.88	0.37

CALIB  
 STANDHYD ( 5042) | Area (ha)= 7.70  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)

Surface Area (ha)= 5.77 1.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 226.57 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 140.83  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 3.46 (ii) 8.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.26 0.12

PEAK FLOW (cms)= 2.18 0.55  
 TIME TO PEAK (hrs)= 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 50.74  
 TOTAL RAINFALL (mm)= 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):	184.50	12.778	3.17	51.70
+ ID2= 2 ( 5042):	7.70	2.728	3.00	79.91
ID = 3 ( 0106):	192.20	13.694	3.08	52.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5212) | Area (ha)= 15.70  
 ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

Surface Area (ha)= 11.78 3.93  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00  
 Mannings n = 0.013 0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		



Max.Eff.Inten.(mm/hr)= 159.59 161.71  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 4.29 (ii) 9.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.23 0.12

\*TOTALS\*  
 PEAK FLOW (cms)= 4.44 1.27 5.713 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 95.62 60.49 83.68  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.60 0.82

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 |  
 | STANDBY ( 5202) | Area (ha)= 29.70  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00  
 -----

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	14.85	14.85
Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	444.97	40.00
Mannings n =	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
0.18	83.14	.605E+03	0.3
0.23	83.18	.946E+03	0.5
0.27	83.23	.151E+04	0.9
0.32	83.27	.323E+04	1.8
0.37	83.32	.510E+04	3.2
0.42	83.37	.713E+04	5.0
0.46	83.42	.934E+04	7.3
0.51	83.47	.121E+05	10.0
0.56	83.52	.156E+05	13.4
0.61	83.57	.196E+05	17.7
0.66	83.61	.240E+05	22.8
0.71	83.66	.286E+05	28.4
0.75	83.71	.336E+05	34.7
0.80	83.76	.390E+05	41.8
0.85	83.81	.448E+05	49.8
0.90	83.86	.510E+05	58.8

----- hydrograph ----- <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW: ID= 2 ( 5202) 29.70 7.22 3.00 69.59 0.46 0.42  
 OUTFLOW: ID= 1 ( 0521) 29.70 3.93 3.17 69.58 0.39 0.36

-----  
 | ADD HYD ( 0113) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0521): 29.70 3.931 3.17 69.58  
 + ID2= 2 ( 5212): 15.70 5.713 3.00 83.68  
 =====  
 ID = 3 ( 0113): 45.40 8.845 3.00 74.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0114) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0106): 192.20 13.694 3.08 52.83  
 + ID2= 2 ( 0113): 45.40 8.845 3.00 74.45  
 =====  
 ID = 3 ( 0114): 237.60 21.769 3.00 56.96

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 137.17  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.19 (ii) 12.85 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 4.37 3.36 7.217 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 100.12 53.16 69.59  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.99 0.52 0.68

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | ROUTE CHN( 0521) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00  
 -----

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900 / 0.0700
513.93	82.96	0.0700
526.85	83.23	0.0700 / 0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29

-----  
 | ROUTE CHN( 0505) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00  
 -----

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning
0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 / 0.0900
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900
501.51	83.16	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0114) 237.60 21.77 3.00 56.96 1.15 0.70
OUTFLOW: ID= 1 ( 0505) 237.60 20.93 3.08 56.96 1.13 0.69

```

```

Unit Hyd. peak (cms)= 0.23 0.12
PEAK FLOW (cms)= 4.43 1.07 *TOTALS*
TIME TO PEAK (hrs)= 3.00 3.00 5.495 (iii)
RUNOFF VOLUME (mm)= 95.62 49.62 79.52
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.49 0.78

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 5052) Area (ha)= 15.90
ID= 1 DT= 5.0 min Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.77 4.13
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 325.58 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 4.09 1.583 10.23 3.083 22.51 4.58 6.14
0.167 4.09 1.667 10.23 3.167 22.51 4.67 6.14
0.250 4.09 1.750 10.23 3.250 22.51 4.75 6.14
0.333 4.09 1.833 10.23 3.333 22.51 4.83 6.14
0.417 4.09 1.917 10.23 3.417 22.51 4.92 6.14
0.500 4.09 2.000 10.23 3.500 22.51 5.00 6.14
0.583 6.14 2.083 12.28 3.583 10.23 5.08 4.09
0.667 6.14 2.167 12.28 3.667 10.23 5.17 4.09
0.750 6.14 2.250 12.28 3.750 10.23 5.25 4.09
0.833 6.14 2.333 12.28 3.833 10.23 5.33 4.09
0.917 6.14 2.417 12.28 3.917 10.23 5.42 4.09
1.000 6.14 2.500 12.28 4.000 10.23 5.50 4.09
1.083 6.14 2.583 61.38 4.083 8.18 5.58 4.09
1.167 6.14 2.667 61.38 4.167 8.18 5.67 4.09
1.250 6.14 2.750 110.48 4.250 8.18 5.75 4.09
1.333 6.14 2.833 110.48 4.333 8.18 5.83 4.09
1.417 6.14 2.917 159.59 4.417 8.18
1.500 6.14 3.000 159.59 4.500 8.18

```

```

Max.Eff.Inten.(mm/hr)= 159.59 132.71
over (min) = 5.00 10.00
Storage Coeff. (min)= 4.30 (ii) 9.30 (ii)
Unit Hyd. Tpeak (min)= 5.00 10.00

```

```

ADD HYD ( 0108)
1 + 2 = 3 AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0505): 237.60 20.929 3.08 56.96
+ ID2= 2 ( 5052): 15.90 5.495 3.00 79.52
=====
ID = 3 ( 0108): 253.50 24.441 3.00 58.37

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ROUTE CHN( 0506)
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

```

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900

```

305.35 80.37 0.0900
346.67 80.41 0.0900
387.99 80.33 0.0900
415.54 80.53 0.0900
447.88 80.49 0.0900

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0108) 253.50 24.44 3.00 58.37 1.90 0.74
OUTFLOW: ID= 1 ( 0506) 253.50 21.32 3.17 58.37 1.86 0.79

```

```

PEAK FLOW (cms)= 3.28 0.88 *TOTALS*
TIME TO PEAK (hrs)= 3.00 3.00 4.160 (iii)
RUNOFF VOLUME (mm)= 95.62 54.10 81.09
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.53 0.80

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 5062) Area (ha)= 11.70
ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 8.78 2.92
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 279.28 40.00
Mannings n = 0.013 0.250

```

```

ADD HYD ( 0110)
1 + 2 = 3 AREA QPEAK TPEAK R.V.

```

```

-----
              (ha)   (cms)   (hrs)   (mm)
ID1= 1 ( 0506): 253.50 21.319 3.17 58.37
+ ID2= 2 ( 5062): 11.70 4.160 3.00 81.09
-----
ID = 3 ( 0110): 265.20 22.582 3.17 59.38

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

-----
| CALIB |
| STANDHYD ( 5102) | Area (ha)= 1.70
| ID= 1 DT= 5.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00
-----

```

```

-----
              IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 1.09 0.61
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 106.46 40.00
Mannings n = 0.013 0.250
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14
0.167 4.09 | 1.667 10.23 | 3.167 22.51 | 4.67 6.14
0.250 4.09 | 1.750 10.23 | 3.250 22.51 | 4.75 6.14
0.333 4.09 | 1.833 10.23 | 3.333 22.51 | 4.83 6.14
0.417 4.09 | 1.917 10.23 | 3.417 22.51 | 4.92 6.14
0.500 4.09 | 2.000 10.23 | 3.500 22.51 | 5.00 6.14
0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

```

```

Max.Eff.Inten.(mm/hr)= 159.59 125.18
over (min) 5.00 15.00
Storage Coeff. (min)= 2.20 (ii) 10.14 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.30 0.10

```

```

1.76 80.77 .762E+04 72.3 1.38 1.76
1.87 80.89 .833E+04 81.4 1.42 1.71
2.00 81.02 .931E+04 92.4 1.44 1.68
2.13 81.14 .109E+05 104.8 1.39 1.74
2.25 81.27 .140E+05 120.9 1.25 1.93

```

```

----- hydrograph ----- <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 5102) 1.70 0.51 3.00 72.37 0.10 0.24
OUTFLOW: ID= 1 ( 0511) 1.70 0.37 3.00 72.34 0.07 0.24

```

```

-----
| CALIB |
| STANDHYD ( 5112) | Area (ha)= 3.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00
-----

```

```

-----
              IMPERVIOUS   PERVIOUS (i)
Surface Area (ha)= 2.07 0.93
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 141.42 40.00
Mannings n = 0.013 0.250
-----

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14
0.167 4.09 | 1.667 10.23 | 3.167 22.51 | 4.67 6.14
0.250 4.09 | 1.750 10.23 | 3.250 22.51 | 4.75 6.14
0.333 4.09 | 1.833 10.23 | 3.333 22.51 | 4.83 6.14
0.417 4.09 | 1.917 10.23 | 3.417 22.51 | 4.92 6.14
0.500 4.09 | 2.000 10.23 | 3.500 22.51 | 5.00 6.14
0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |

```

```

*TOTALS*
PEAK FLOW (cms)= 0.39 0.14 0.507 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 47.19 72.37
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.46 0.71

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 66.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL
THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

```

| ROUTE CHN( 0511) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

```

```

<----- DATA FOR SECTION ( 553.6) ----->
Distance Elevation Manning
0.00 81.24 0.1100
33.01 80.98 0.1100
49.97 81.27 0.1100
54.18 80.35 0.1100
60.88 81.23 0.1100 /0.0700 Main Channel
69.13 79.02 0.0700 Main Channel
92.42 79.04 0.0700 Main Channel
98.70 80.89 0.0700 /0.1100 Main Channel
128.88 81.13 0.1100
199.00 81.23 0.1100

```

```

<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.12 79.13 .361E+03 0.6 0.24 9.91
0.23 79.25 .776E+03 2.1 0.40 6.09
0.35 79.37 .121E+04 4.3 0.52 4.65
0.47 79.48 .165E+04 7.1 0.63 3.85
0.59 79.60 .211E+04 10.5 0.72 3.34
0.70 79.72 .258E+04 14.4 0.81 2.98
0.82 79.84 .307E+04 18.8 0.89 2.71
0.94 79.95 .357E+04 23.8 0.97 2.50
1.05 80.07 .408E+04 29.2 1.04 2.33
1.17 80.19 .461E+04 35.1 1.10 2.19
1.29 80.30 .515E+04 41.5 1.17 2.07
1.41 80.42 .571E+04 48.4 1.23 1.97
1.52 80.54 .631E+04 55.8 1.28 1.88
1.64 80.66 .695E+04 63.8 1.33 1.81

```

```

1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

```

```

Max.Eff.Inten.(mm/hr)= 159.59 142.77
over (min) 5.00 15.00
Storage Coeff. (min)= 2.61 (ii) 10.14 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.29 0.10

```

```

*TOTALS*
PEAK FLOW (cms)= 0.77 0.24 0.972 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 53.17 77.79
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.52 0.77

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN* = 71.0 Ia = Dep. 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 ( 0117) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0511): 1.70 0.367 3.00 72.34
+ ID2= 2 ( 5112): 3.00 0.972 3.00 77.79
-----
ID = 3 ( 0117): 4.70 1.339 3.00 75.82

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0512) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

```

```

<----- DATA FOR SECTION ( 484.2) ----->
Distance Elevation Manning
0.00 80.80 0.0900
9.73 80.46 0.0900
14.10 82.04 0.0900
17.18 82.28 0.0900
41.13 82.12 0.0900 /0.0700 Main Channel
46.88 79.71 0.0700 Main Channel
51.41 80.90 0.0700 /0.0900 Main Channel
94.29 80.56 0.0900
175.64 80.72 0.0900

```

192.09 80.85 0.0900

TRAVEL TIME TABLE

Table with 6 columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Rows show data for various depths from 0.13 to 2.56 meters.

Summary table with 6 columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s). Includes INFLOW and OUTFLOW data for IDs 2 and 1.

CALIB table with 2 columns: Parameter (e.g., Area, Total Imp) and Value. Includes IMPERVIOUS and PERVIOUS percentages.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

ID = 3 ( 0119): 8.60 1.969 3.00 76.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD table with 5 columns: ID, AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Shows combined data for IDs 1, 2, and 3.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB table with 2 columns: Parameter (e.g., Area, Curve Number) and Value. Includes NASHYD and U.H. Tp data.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with 6 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr). Shows rainfall intensity over time.

Unit Hyd Qpeak (cms) = 2.027
PEAK FLOW (cms) = 1.942 (i)

Table with 8 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr). Shows rainfall intensity over time.

Max.Eff.Inten.(mm/hr)= 159.59 141.05
Storage Coeff. (min)= 5.00 15.00
Unit Hyd. Tpeak (min)= 2.82 (ii) 10.39 (ii)

\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD table with 5 columns: ID, AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Shows combined data for IDs 1, 2, and 3.

TIME TO PEAK (hrs)= 3.833
RUNOFF VOLUME (mm)= 35.157
TOTAL RAINFALL (mm)= 101.620
RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB table with 2 columns: Parameter (e.g., Area, Total Imp) and Value. Includes NASHYD and U.H. Tp data.

Surface Area (ha)= 3.08 7.92
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 270.80 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

TRANSFORMED HYETOGRAPH table with 8 columns: TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr), TIME (hrs), RAIN (mm/hr). Shows rainfall intensity over time.

Max.Eff.Inten.(mm/hr)= 159.59 91.88
Storage Coeff. (min)= 3.85 (ii) 12.84 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00

\*TOTALS\*  
 PEAK FLOW (cms)= 0.76 1.16 1.726 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 39.35 48.35  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.39 0.48

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124) |  
1 + 2 = 3
 ID1= 1 ( 6011): 44.10 1.942 3.83 35.16  
 + ID2= 2 ( 6012): 11.00 1.726 3.00 48.35  
 -----  
 ID = 3 ( 0124): 55.10 2.327 3.50 37.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | NASHYD ( 6021) | Area (ha)= 43.60 Curve Number (CN)= 62.0  
 | ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
U.H. Tp(hrs)= 0.95

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09

0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
 1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
 1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 94.24  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.04 (ii) 12.94 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.28 1.26 2.325 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 95.62 39.77 52.62  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.94 0.39 0.52

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125) |  
1 + 2 = 3
 ID1= 1 ( 6021): 43.60 1.734 4.00 35.16  
 + ID2= 2 ( 6022): 12.90 2.325 3.00 52.62  
 -----  
 ID = 3 ( 0125): 56.50 2.680 3.00 39.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0126) |  
1 + 2 = 3
 ID1= 1 ( 0124): 55.10 2.327 3.50 37.79  
 + ID2= 2 ( 0125): 56.50 2.680 3.00 39.14  
 -----

0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09  
 0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09  
 0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09  
 1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09  
 1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.734 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 35.157  
 TOTAL RAINFALL (mm)= 101.620  
 RUNOFF COEFFICIENT = 0.346

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 6022) | Area (ha)= 12.90  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00  
 -----

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09

ID = 3 ( 0126): 111.60 4.886 3.00 38.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0603) |  
 | IN= 2---> OUT= 1 | Routing time step (min)'= 5.00  
 -----

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700 Main Channel
129.84	89.59	0.0700 Main Channel
130.34	90.09	0.0700 / 0.1400 Main Channel
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33

2.67 92.26 .294E+06 258.5 0.81 18.98  
 2.83 92.42 .332E+06 310.1 0.86 17.85  
 3.00 92.59 .371E+06 358.0 0.88 17.29

<--- hydrograph ---> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0126) 111.60 4.89 3.00 38.48 0.71 0.25  
 OUTFLOW: ID= 1 ( 0603) 111.60 3.29 4.50 38.47 0.66 0.23

Max.Eff.Inten.(mm/hr)= 159.59 134.53  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.43 (ii) 13.15 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08  
 PEAK FLOW (cms)= 4.62 4.02 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 8.033 (iii)  
 RUNOFF VOLUME (mm)= 100.12 52.78 67.93  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.99 0.52 0.67

CALIB  
 STANDHYD ( 6032) | Area (ha)= 34.60  
 ID= 1 DT= 5.0 min | Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 16.26 18.34  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 480.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 6102) | Area (ha)= 21.10  
 ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.55 10.55  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 375.06 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09

1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09  
 1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09  
 1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09  
 1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09  
 1.417 6.14 | 2.917 159.59 | 4.417 8.18 |  
 1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

Max.Eff.Inten.(mm/hr)= 159.59 131.44  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.68 (ii) 12.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08  
 PEAK FLOW (cms)= 3.14 2.30 5.089 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 100.12 50.86 68.10  
 TOTAL RAINFALL (mm)= 101.62 101.62 101.62  
 RUNOFF COEFFICIENT = 0.99 0.50 0.67

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604) | Routing time step (min)'= 5.00  
 IN= 2---> OUT= 1 |

----- DATA FOR SECTION (1414.9) -----

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

ADD HYD ( 0128) |  
 1 + 2 = 3 | AREA OPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0603): 111.60 3.287 4.50 38.47  
 + ID2= 2 ( 6032): 34.60 8.033 3.00 67.93  
 ID = 3 ( 0128): 146.20 8.917 3.00 45.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128) |  
 3 + 2 = 1 | AREA OPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0128): 146.20 8.917 3.00 45.44  
 + ID2= 2 ( 6102): 21.10 5.089 3.00 68.10  
 ID = 1 ( 0128): 167.30 14.006 3.00 48.30

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80

3.63 87.41 .271E+06 44.8 0.11 100.89

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.30	14.01	3.00	48.30	2.86	0.09
OUTFLOW: ID= 1 ( 0604)	167.30	4.70	3.08	48.29	2.37	0.08

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
STANDHYD ( 6042)  
ID= 1 DT= 5.0 min

Area (ha)= 24.00  
Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	18.72	5.28
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	400.00	40.00
Mannings n	0.013	0.250

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	4.09	1.583	10.23	3.083	22.51	4.58	6.14
0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

Max.Eff.Inten.(mm/hr)= 159.59 175.99

over (min)	5.00	10.00	
Storage Coeff. (min)	4.87 (ii)	9.43 (ii)	
Unit Hyd. Tpeak (min)	5.00	10.00	
Unit Hyd. peak (cms)	0.22	0.12	
PEAK FLOW (cms)	7.01	1.86	8.868 (iii)
TIME TO PEAK (hrs)	3.00	3.00	3.00
RUNOFF VOLUME (mm)	95.62	63.99	85.81
TOTAL RAINFALL (mm)	101.62	101.62	101.62
RUNOFF COEFFICIENT	0.94	0.63	0.84

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 0130)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0604):	167.30	4.698	3.08	48.29
+ ID2= 2 ( 6042):	24.00	8.868	3.00	85.81
=====				
ID = 3 ( 0130):	191.30	13.183	3.00	53.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
IN= 2----> OUT= 1

Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 801.4) -----

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700

Main Channel

258.15	80.95	0.0700	Main Channel
259.65	81.95	0.0700 / 0.1100	Main Channel
263.15	82.90	0.1100	
278.14	82.80	0.1100	
282.35	81.68	0.1100	
285.02	82.19	0.1100	
336.56	82.53	0.1100	
404.40	82.68	0.1100	

Length (m)= 275.68 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.30	13.18	3.00	53.00	1.29	0.32
OUTFLOW: ID= 1 ( 0605)	191.30	6.57	3.25	52.99	1.05	0.35

CALIB  
STANDHYD ( 6112)  
ID= 1 DT= 5.0 min

Area (ha)= 11.40  
Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	8.21	3.19
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

over (min)	5.00	10.00	
Storage Coeff. (min)	3.89 (ii)	11.18 (ii)	
Unit Hyd. Tpeak (min)	5.00	15.00	
Unit Hyd. peak (cms)	0.25	0.09	
PEAK FLOW (cms)	3.05	0.87	3.805 (iii)
TIME TO PEAK (hrs)	3.00	3.08	3.00
RUNOFF VOLUME (mm)	95.62	57.95	81.31
TOTAL RAINFALL (mm)	101.62	101.62	101.62
RUNOFF COEFFICIENT	0.94	0.57	0.80





```

| ADD HYD ( 0134) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0530): 218.60 10.965 3.08 56.34
+ ID2= 2 ( 5302): 5.80 1.761 3.00 73.94
-----
ID = 3 ( 0134): 224.40 11.905 3.00 56.80

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0135) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0120): 273.80 23.855 3.17 59.91
+ ID2= 2 ( 0134): 224.40 11.905 3.00 56.80
-----
ID = 3 ( 0135): 498.20 35.454 3.08 58.51

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0507) |
| IN= 2----> OUT= 1 |
Routing time step (min)'= 5.00

```

```

<----- DATA FOR SECTION ( 40.0) ----->
Distance Elevation Manning
0.00 79.36 0.0900
7.45 79.32 0.0900
13.77 79.27 0.0900
20.24 79.24 0.0900
27.28 79.26 0.0900
34.16 79.13 0.0900
40.79 79.05 0.0900
47.58 79.05 0.0900
54.30 79.07 0.0900
60.87 79.24 0.0900
71.39 79.48 0.0900
73.53 78.96 0.0900
76.96 78.07 0.0900
82.21 77.08 0.0900 / 0.0700 Main Channel
85.82 76.28 0.0700 Main Channel
89.97 76.89 0.0700 Main Channel
91.35 77.38 0.0700 / 0.0900 Main Channel
95.27 78.68 0.0900
98.44 79.63 0.0900
102.89 79.89 0.0900

```

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

```

<---- hydrograph ----> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0135) 498.20 35.45 3.08 58.51 2.72 1.05
OUTFLOW: ID= 1 ( 0507) 498.20 31.14 3.33 58.51 2.57 1.01

```

```

| CALIB |
| STANDHYD ( 5072) |
| ID= 1 DT= 5.0 min |
Area (ha)= 48.90
Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 24.45 24.45
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 570.96 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14

```

0.167	4.09	1.667	10.23	3.167	22.51	4.67	6.14
0.250	4.09	1.750	10.23	3.250	22.51	4.75	6.14
0.333	4.09	1.833	10.23	3.333	22.51	4.83	6.14
0.417	4.09	1.917	10.23	3.417	22.51	4.92	6.14
0.500	4.09	2.000	10.23	3.500	22.51	5.00	6.14
0.583	6.14	2.083	12.28	3.583	10.23	5.08	4.09
0.667	6.14	2.167	12.28	3.667	10.23	5.17	4.09
0.750	6.14	2.250	12.28	3.750	10.23	5.25	4.09
0.833	6.14	2.333	12.28	3.833	10.23	5.33	4.09
0.917	6.14	2.417	12.28	3.917	10.23	5.42	4.09
1.000	6.14	2.500	12.28	4.000	10.23	5.50	4.09
1.083	6.14	2.583	61.38	4.083	8.18	5.58	4.09
1.167	6.14	2.667	61.38	4.167	8.18	5.67	4.09
1.250	6.14	2.750	110.48	4.250	8.18	5.75	4.09
1.333	6.14	2.833	110.48	4.333	8.18	5.83	4.09
1.417	6.14	2.917	159.59	4.417	8.18		
1.500	6.14	3.000	159.59	4.500	8.18		

```

Max.Eff.Inten.(mm/hr)= 159.59 139.84
over (min) 5.00 15.00
Storage Coeff. (min)= 6.03 (ii) 13.63 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.19 0.08
*TOTALS*
PEAK FLOW (cms)= 7.24 5.52 11.930 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 55.09 69.68
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.54 0.69

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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 |
-----
ID1= 1 ( 0507): 498.20 31.144 3.33 58.51
+ ID2= 2 ( 5072): 48.90 11.930 3.00 69.68
-----
ID = 3 ( 0122): 547.10 37.620 3.17 59.51

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 5402) |
| ID= 1 DT= 5.0 min |
Area (ha)= 9.40
Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 4.70 4.70
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 250.33 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 4.09 | 1.583 10.23 | 3.083 22.51 | 4.58 6.14
0.167 4.09 | 1.667 10.23 | 3.167 22.51 | 4.67 6.14
0.250 4.09 | 1.750 10.23 | 3.250 22.51 | 4.75 6.14
0.333 4.09 | 1.833 10.23 | 3.333 22.51 | 4.83 6.14
0.417 4.09 | 1.917 10.23 | 3.417 22.51 | 4.92 6.14
0.500 4.09 | 2.000 10.23 | 3.500 22.51 | 5.00 6.14
0.583 6.14 | 2.083 12.28 | 3.583 10.23 | 5.08 4.09
0.667 6.14 | 2.167 12.28 | 3.667 10.23 | 5.17 4.09
0.750 6.14 | 2.250 12.28 | 3.750 10.23 | 5.25 4.09
0.833 6.14 | 2.333 12.28 | 3.833 10.23 | 5.33 4.09
0.917 6.14 | 2.417 12.28 | 3.917 10.23 | 5.42 4.09
1.000 6.14 | 2.500 12.28 | 4.000 10.23 | 5.50 4.09
1.083 6.14 | 2.583 61.38 | 4.083 8.18 | 5.58 4.09
1.167 6.14 | 2.667 61.38 | 4.167 8.18 | 5.67 4.09
1.250 6.14 | 2.750 110.48 | 4.250 8.18 | 5.75 4.09
1.333 6.14 | 2.833 110.48 | 4.333 8.18 | 5.83 4.09
1.417 6.14 | 2.917 159.59 | 4.417 8.18 |
1.500 6.14 | 3.000 159.59 | 4.500 8.18 |

```

```

Max.Eff.Inten.(mm/hr)= 159.59 120.33
over (min) 5.00 15.00
Storage Coeff. (min)= 3.67 (ii) 11.74 (iii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.25 0.09
*TOTALS*
PEAK FLOW (cms)= 1.43 0.95 2.231 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 95.62 46.47 63.67
TOTAL RAINFALL (mm)= 101.62 101.62 101.62
RUNOFF COEFFICIENT = 0.94 0.46 0.63

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!









\*\*\*\*\* D E T A I L E D O U T P U T \*\*\*\*\*

Input filename: C:\Program Files (x86)\Visual OTTHYMO 6.2\VO2\voin.dat

Output filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\58ebec05-56f8-4fd1-be9a-82e42f37ea5\  
 Summary filename:  
 C:\Users\jannaormond\AppData\Local\Civica\H5\860df144-956f-4cfc-88fc-f31f1a71e94a\58ebec05-56f8-4fd1-be9a-82e42f37ea5\

DATE: 04-10-2024 TIME: 01:25:32

USER:

COMMENTS: \_\_\_\_\_

\*\*\*\*\*  
 \*\* SIMULATION : 10yrII6.stm \*\*  
 \*\*\*\*\*

READ STORM  
 Ptotal= 67.60 mm  
 Filename: C:\Users\jannaormond\AppData\Local\Temp\5b66f7bc-e58d-45d3-b0f6-6b3e1edcbf8b\62f6350e  
 Comments: Mount Hope-6 hour SCS Distribution Desig

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.00	2.70	1.50	6.76	3.00	14.87	4.50	4.06
0.17	2.70	1.67	6.76	3.17	14.87	4.67	4.06
0.33	2.70	1.83	6.76	3.33	14.87	4.83	4.06
0.50	4.06	2.00	8.11	3.50	6.76	5.00	2.70
0.67	4.06	2.17	8.11	3.67	6.76	5.17	2.70
0.83	4.06	2.33	8.11	3.83	6.76	5.33	2.70
1.00	4.06	2.50	40.56	4.00	5.41	5.50	2.70
1.17	4.06	2.67	73.01	4.17	5.41	5.67	2.70
1.33	4.06	2.83	105.46	4.33	5.41	5.83	2.70

CALIB  
 NASHYD ( 5011) | Area (ha)= 80.20 Curve Number (CN)= 65.0  
 ID= 1 DT= 5.0 min | Ia (mm)= 8.00 # of Linear Res. (N)= 3.00  
 U.H. Tp(hrs)= 0.85

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 1.741 (i)  
 TIME TO PEAK (hrs)= 3.917  
 RUNOFF VOLUME (mm)= 18.089  
 TOTAL RAINFALL (mm)= 67.600  
 RUNOFF COEFFICIENT = 0.268

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 5012) | Area (ha)= 39.40  
 ID= 1 DT= 5.0 min | Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.97 24.43  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

Length (m)= 512.51 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max. Eff. Inten. (mm/hr)= 105.46 44.47  
 over (min)= 5.00 20.00  
 Storage Coeff. (min)= 6.67 (ii) 18.68 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

PEAK FLOW (cms)= 2.53 1.64  
 TIME TO PEAK (hrs)= 3.00 3.25  
 RUNOFF VOLUME (mm)= 61.60 21.60  
 TOTAL RAINFALL (mm)= 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.32 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 65.0 Ia = Dep. 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 ( 0100)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 5011): 80.20 1.741 3.92 18.09  
 + ID2= 2 ( 5012): 39.40 3.612 3.00 31.20  
 ID = 3 ( 0100): 119.60 3.973 3.00 22.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700 Main Channel
57.54	86.84	0.0700 Main Channel
59.04	86.84	0.0700 Main Channel
61.04	87.84	0.0700 / 0.1100 Main Channel
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39



- (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 ( 0503): 170.70  6.580  3.08  26.46
+ ID2= 2 ( 5032):  13.80  2.901  3.00  50.45
=====
ID = 3 ( 0104): 184.50  9.040  3.00  28.26
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
ROUTE CHN ( 0504)
IN= 2----> OUT= 1
Routing time step (min)= 5.00
```

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00

0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 over (min)= 5.00  
Storage Coeff. (min)= 4.09 (ii) 13.95 (ii)  
Unit Hyd. Tpeak (min)= 5.00  
Unit Hyd. peak (cms)= 0.24

\*TOTALS\*  
PEAK FLOW (cms)= 1.42 0.21 1.600 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 26.01 49.14  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.38 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0106)
1 + 2 = 3
AREA      QPEAK  TPEAK  R.V.
  (ha)    (cms)  (hrs)  (mm)
ID1= 1 ( 0504): 184.50  6.702  3.17  28.25
+ ID2= 2 ( 5042):  7.70  1.600  3.00  49.14
=====
ID = 3 ( 0106): 192.20  7.226  3.17  29.09
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```
CALIB
STANDHYD ( 5212) Area (ha)= 15.70
ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00
```

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
0.45	82.30	.312E+03	0.4	0.32	13.44	
0.57	82.42	.116E+04	1.2	0.28	15.74	
0.68	82.53	.287E+04	3.5	0.32	13.85	
0.79	82.64	.549E+04	7.0	0.33	13.13	
0.91	82.76	.101E+05	14.9	0.39	11.28	
1.02	82.87	.155E+05	27.5	0.47	9.38	
1.13	82.98	.214E+05	45.2	0.55	7.89	
1.25	83.10	.277E+05	67.2	0.64	6.87	
1.36	83.21	.344E+05	93.6	0.71	6.12	
1.47	83.32	.426E+05	125.3	0.77	5.67	
1.59	83.44	.516E+05	162.2	0.82	5.30	
1.70	83.55	.620E+05	204.2	0.86	5.06	
1.81	83.66	.747E+05	254.0	0.89	4.90	
1.95	83.80	.924E+05	324.9	0.92	4.74	
2.08	83.93	.113E+06	411.3	0.95	4.59	
2.21	84.06	.135E+06	515.5	1.00	4.37	

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	184.50	9.04	3.00	28.26	0.82	0.35
OUTFLOW: ID= 1 ( 0504)	184.50	6.70	3.17	28.25	0.79	0.33

```
CALIB
STANDHYD ( 5042) Area (ha)= 7.70
ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00
```

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	5.77	1.92
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	226.57	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06

IMPERVIOUS PERVIOUS (i)

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.78	3.93
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	323.52	40.00
Mannings n =	0.013	0.250

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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)=	105.46	88.37
over (min)	5.00	15.00
Storage Coeff. (min)=	5.06 (ii)	14.19 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.21	0.08

\*TOTALS\*

PEAK FLOW (cms)=	2.89	0.54	3.333 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	61.60	32.42	51.68
TOTAL RAINFALL (mm)=	67.60	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.48	0.76

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.



(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

RUNOFF COEFFICIENT = 0.98 0.41 0.61

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 72.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

Table with columns: CALIB, STANDHYD (5202), ID= 1 DT= 5.0 min, Area (ha)= 29.70, Total Imp(%)= 50.00, Dir. Conn.(%)= 35.00, IMPERVIOUS, PERVERIOUS (i), Surface Area (ha)= 14.85, Dep. Storage (mm)= 1.50, Average Slope (%)= 1.00, Length (m)= 444.97, Mannings n = 0.013

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Rows show rainfall intensity over time from 0.083 to 1.500 hours.

Summary statistics table including Max. Eff. Inten. (mm/hr)= 105.46, Storage Coeff. (min)= 6.12 (ii), PEAK FLOW (cms)= 2.82, TIME TO PEAK (hrs)= 3.00, RUNOFF VOLUME (mm)= 66.10, TOTAL RAINFALL (mm)= 67.60

ROUTE CHN( 0521)
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION ( 815.4) table with columns: Distance, Elevation, Manning. Rows show channel characteristics from 415.18 to 663.54 distance.

TRAVEL TIME TABLE table with columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Rows show travel time data for various depths from 0.05 to 0.90 meters.

hydrograph table with columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL

INFLOW / OUTFLOW table with columns: (ha), (cms), (hrs), (mm), (m), (m/s). Rows show flow data for ID= 2 (5202) and ID= 1 (0521).

ADD HYD ( 0113) table with columns: AREA, QPEAK, TPEAK, R.V. Rows show combined flow data for ID1= 1 (0521) and ID2= 2 (5212).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114) table with columns: AREA, QPEAK, TPEAK, R.V. Rows show combined flow data for ID1= 1 (0106) and ID2= 2 (0113).

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION ( 553.6)

Channel data table for section 553.6 with columns: Distance, Elevation, Manning. Rows show data from 0.00 to 331.74 distance.

CALIB table with columns: STANDHYD (5052), ID= 1 DT= 5.0 min, Area (ha)= 15.90, Total Imp(%)= 74.00, Dir. Conn.(%)= 65.00

INFLOW / OUTFLOW table with columns: (ha), (cms), (hrs), (mm), (m), (m/s). Rows show flow data for ID= 2 (0114) and ID= 1 (0505).

TRAVEL TIME TABLE table with columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Rows show travel time data for various depths from 0.12 to 2.19 meters.

hydrograph table with columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL

INFLOW / OUTFLOW table with columns: (ha), (cms), (hrs), (mm), (m), (m/s). Rows show flow data for ID= 2 (0114) and ID= 1 (0505).

Summary statistics table including Surface Area (ha)= 11.77, Dep. Storage (mm)= 6.00, Average Slope (%)= 1.00, Length (m)= 325.58

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 57.40  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.08 (ii) 15.93 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 2.88 0.39 3.143 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 25.27 48.88  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.37 0.72

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0108) |

1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0108)	253.50	13.09	3.00	33.12	1.69	1.02
OUTFLOW: ID= 1 ( 0506)	253.50	12.04	3.17	33.12	1.66	1.07

| CALIB  
 | STANDHYD ( 5062) | Area (ha)= 11.70  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.78 2.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 279.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0505):	237.60	11.037	3.08	32.07
+ ID2= 2 ( 5052):	15.90	3.143	3.00	48.88
=====				
ID = 3 ( 0108):	253.50	13.088	3.00	33.12

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0506) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m)	(cms)	(m/s)	(min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28

1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 78.89  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 4.63 (ii) 14.18 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 2.14 0.35 2.430 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 28.16 49.90  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.42 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0110) |

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0506):	253.50	12.042	3.17	33.12
+ ID2= 2 ( 5062):	11.70	2.430	3.00	49.90
=====				
ID = 3 ( 0110):	265.20	13.070	3.08	33.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB  
 | STANDHYD ( 5102) | Area (ha)= 1.70  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.09 0.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 106.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 53.29  
over (min) 5.00 15.00  
Storage Coeff. (min)= 2.60 (ii) 13.77 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.29 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.26 0.06 0.306 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 23.76 43.43  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.35 0.64

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511) |  
| IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 5102)	1.70	0.31	3.00	43.43	0.06	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.22	3.00	43.42	0.04	0.24

CALIB |  
| STANDHYD ( 5112) | Area (ha)= 3.00  
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.07	0.93
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	141.42	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 74.74  
over (min) 5.00 15.00  
Storage Coeff. (min)= 3.08 (ii) 12.84 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.27 0.08

\*TOTALS\*

PEAK FLOW (cms)= 0.50 0.11 0.595 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 61.60 27.53 47.29  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.41 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117) |  
| 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0511):	1.70	0.222	3.00	43.42
+ ID2= 2 ( 5112):	3.00	0.595	3.00	47.29
=====				
ID = 3 ( 0117):	4.70	0.817	3.00	45.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) |  
| IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel
46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64

2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ---->						<-pipe / channel->		
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL			
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)			
INFLOW: ID= 2 ( 0117)	4.70	0.82	3.00	45.89	0.75	0.45		
OUTFLOW: ID= 1 ( 0512)	4.70	0.50	3.08	45.83	0.63	0.40		

Max.Eff.Inten.(mm/hr)=	105.46	73.73	
over (min)	5.00	15.00	
Storage Coeff. (min)=	3.33 (ii)	13.15 (iii)	
Unit Hyd. Tpeak (min)=	5.00	15.00	
Unit Hyd. peak (cms)=	0.26	0.08	
PEAK FLOW (cms)=	0.64	0.15	0.761 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	61.60	27.37	46.88
TOTAL RAINFALL (mm)=	67.60	67.60	67.60
RUNOFF COEFFICIENT =	0.91	0.40	0.69

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0512):	4.70	0.501	3.08	45.83
+ ID2= 2 ( 5122):	3.90	0.761	3.00	46.88
=====				
ID = 3 ( 0119):	8.60	1.226	3.00	46.30

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0110):	265.20	13.070	3.08	33.86
+ ID2= 2 ( 0119):	8.60	1.226	3.00	46.30
=====				
ID = 3 ( 0120):	273.80	14.065	3.00	34.25

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB				
STANDHYD ( 6011)				
ID= 1 DT= 5.0 min				
Area (ha)=	44.10	Curve Number (CN)=	62.0	
Ia (mm)=	8.00	# of Linear Res.(N)=	3.00	

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

U.H. Tp(hrs)= 0.83  
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	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 0.881 (i)  
TIME TO PEAK (hrs)= 3.833  
RUNOFF VOLUME (mm)= 16.500  
TOTAL RAINFALL (mm)= 67.600  
RUNOFF COEFFICIENT = 0.244

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB				
STANDHYD ( 6012)				
ID= 1 DT= 5.0 min				
Area (ha)=	11.00	Dir. Conn.(%)=	16.00	
Total Imp(%)=	28.00			

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	3.08	7.92	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	270.80	40.00	
Mannings n =	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 37.03  
over (min) 5.00 20.00  
Storage Coeff. (min)= 4.55 (ii) 17.48 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.06

PEAK FLOW (cms)= 0.50 0.45 0.795 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 19.00 25.82  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.28 0.38

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.



Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 480.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 59.29  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 6.41 (ii) 17.12 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.98 1.72 4.160 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 66.10 27.22 39.66  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.98 0.40 0.59

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 -----  
 | STANDBYD ( 6102) | Area (ha)= 21.10  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.55 10.55  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 375.06 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 57.22  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 5.53 (ii) 16.39 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.20 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.03 0.97 2.701 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 66.10 26.01 40.04  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.98 0.38 0.59

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

----- ADD HYD ( 0128) -----  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0603): 111.60 1.507 4.58 18.86  
 + ID2= 2 ( 6032): 34.60 4.160 3.00 39.66  
 ID = 3 ( 0128): 146.20 4.569 3.00 23.78

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ADD HYD ( 0128) -----  
 | 3 + 2 = 1 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 3 ( 0128): 146.20 4.569 3.00 23.78  
 + ID2= 2 ( 6102): 21.10 2.701 3.00 40.04  
 ID = 1 ( 0128): 167.30 7.270 3.00 25.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

----- ROUTE CHN( 0604) -----  
 | IN= 2----> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0128) 167.30 7.27 3.00 25.83 2.52 0.08  
 OUTFLOW : ID= 1 ( 0604) 167.30 2.60 3.25 25.82 1.99 0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

----- CALIB -----  
 | STANDBYD ( 6042) | Area (ha)= 24.00  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 18.72 5.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00

Length (m) = 400.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 98.27  
 over (min) = 5.00 15.00  
 Storage Coeff. (min)= 5.75 (ii) 14.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08

PEAK FLOW (cms)= 4.54 0.80 5.210 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 61.60 34.91 53.33  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.52 0.79

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 0130) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0604):	167.30	2.603	3.25	25.82
+ ID2= 2 ( 6042):	24.00	5.210	3.00	53.33
-----				
ID = 3 ( 0130):	191.30	7.489	3.00	29.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0605) |  
 | IN= 2--> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15

0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0130)	191.30	7.49	3.00	29.27	1.09	0.37
OUTFLOW: ID= 1 ( 0605)	191.30	3.44	3.42	29.27	0.92	0.30

| CALIB |  
 | STANDHYD ( 6112) | Area (ha)= 11.40  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.21 3.19  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 275.68 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70

| ADD HYD ( 0139) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0605):	191.30	3.437	3.42	29.27
+ ID2= 2 ( 6112):	11.40	2.333	3.00	49.85
-----				
ID = 3 ( 0139):	202.70	4.890	3.00	30.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |  
 | STANDHYD ( 6052) | Area (ha)= 15.90  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 11.77 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 54.20  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.08 (ii) 16.18 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.88 0.36 3.124 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 23.93 48.42  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.35 0.72

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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.
------	-------	-------	------

2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

----- hydrograph ----- <-pipe / channel->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0132 )	218.60	8.01	3.00	31.73	0.75 0.73
OUTFLOW: ID= 1 ( 0530 )	218.60	6.29	3.08	31.73	0.67 0.69

CALIB  
 STANDHYD ( 5302 ) Area (ha)= 5.80  
 ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	3.83	1.97
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	196.64	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0139):	202.70	4.890	3.00	30.43
+ ID2= 2 ( 6052):	15.90	3.124	3.00	48.42
-----				
ID = 3 ( 0132):	218.60	8.014	3.00	31.73

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530 )  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 350.0 ) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700
118.05	78.63	0.0700
124.40	78.89	0.0700 / 0.1100
132.18	79.61	0.1100
139.34	79.23	0.1100
144.67	79.43	0.1100
149.63	79.98	0.1100
153.42	79.79	0.1100
158.56	80.58	0.1100
176.89	81.15	0.1100

----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70

1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 50.53  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.75 (ii) 15.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.25 0.07

\*TOTALS\*  
 PEAK FLOW (cms)= 0.93 0.17 1.043 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 61.60 23.21 44.71  
 TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
 RUNOFF COEFFICIENT = 0.91 0.34 0.66

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134 )  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.60	6.287	3.08 31.73
+ ID2= 2 ( 5302):	5.80	1.043	3.00 44.71
-----			
ID = 3 ( 0134):	224.40	6.805	3.00 32.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135 )  
 1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.
(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.80	14.065	3.00 34.25
+ ID2= 2 ( 0134):	224.40	6.805	3.00 32.07
-----			
ID = 3 ( 0135):	498.20	20.870	3.00 33.27

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.



ROUTE CHN( 0507)  
IN= 2---> OUT= 1 Routing time step (min)'= 5.00

----- DATA FOR SECTION ( 40.0) -----  
Distance Elevation Manning  
0.00 79.36 0.0900  
7.45 79.32 0.0900  
13.77 79.27 0.0900  
20.24 79.24 0.0900  
27.28 79.26 0.0900  
34.16 79.13 0.0900  
40.79 79.05 0.0900  
47.58 79.05 0.0900  
54.30 79.07 0.0900  
60.87 79.24 0.0900  
71.39 79.48 0.0900  
73.53 78.96 0.0900  
76.96 78.07 0.0900  
82.21 77.08 0.0900 / 0.0700 Main Channel  
85.82 76.28 0.0700 Main Channel  
89.97 76.89 0.0700 Main Channel  
91.35 77.38 0.0700 / 0.0900 Main Channel  
95.27 78.68 0.0900  
98.44 79.63 0.0900  
102.89 79.89 0.0900

----- TRAVEL TIME TABLE -----  
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME  
(m) (m) (cu.m.) (cms) (m/s) (min)  
0.16 76.44 .113E+03 0.0 0.14 88.10  
0.32 76.60 .451E+03 0.1 0.23 55.50  
0.49 76.76 .101E+04 0.4 0.30 42.35  
0.65 76.92 .180E+04 0.9 0.37 34.57  
0.81 77.09 .276E+04 1.6 0.44 28.86  
0.97 77.25 .388E+04 2.7 0.52 24.37  
1.14 77.41 .516E+04 4.0 0.59 21.56  
1.30 77.57 .660E+04 5.7 0.66 19.26  
1.46 77.74 .822E+04 7.8 0.72 17.67  
1.62 77.90 .100E+05 10.1 0.77 16.48  
1.79 78.06 .120E+05 12.8 0.82 15.54  
1.95 78.22 .141E+05 15.9 0.87 14.74  
2.11 78.39 .163E+05 19.4 0.91 14.06  
2.27 78.55 .187E+05 23.2 0.95 13.47  
2.44 78.71 .212E+05 27.3 0.99 12.95  
2.60 78.87 .239E+05 31.9 1.02 12.50  
2.76 79.04 .267E+05 36.8 1.06 12.10  
2.92 79.20 .320E+05 39.4 0.94 13.56  
3.09 79.36 .409E+05 45.7 0.85 14.94

<---- hydrograph ----> <-pipe / channel->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0135)	498.20	20.87	3.00	33.27	2.17	0.92
OUTFLOW: ID= 1 ( 0507)	498.20	17.46	3.33	33.27	2.02	0.88

CALIB  
STANDHYD ( 5072) Area (ha)= 48.90  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	24.45	24.45
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	570.96	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN  
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr  
0.083 2.70 | 1.583 6.76 | 3.083 14.87 | 4.58 4.06  
0.167 2.70 | 1.667 6.76 | 3.167 14.87 | 4.67 4.06  
0.250 2.70 | 1.750 6.76 | 3.250 14.87 | 4.75 4.06  
0.333 2.70 | 1.833 6.76 | 3.333 14.87 | 4.83 4.06  
0.417 2.70 | 1.917 6.76 | 3.417 14.87 | 4.92 4.06  
0.500 2.70 | 2.000 6.76 | 3.500 14.87 | 5.00 4.06  
0.583 4.06 | 2.083 8.11 | 3.583 6.76 | 5.08 2.70  
0.667 4.06 | 2.167 8.11 | 3.667 6.76 | 5.17 2.70  
0.750 4.06 | 2.250 8.11 | 3.750 6.76 | 5.25 2.70  
0.833 4.06 | 2.333 8.11 | 3.833 6.76 | 5.33 2.70  
0.917 4.06 | 2.417 8.11 | 3.917 6.76 | 5.42 2.70  
1.000 4.06 | 2.500 8.11 | 4.000 6.76 | 5.50 2.70  
1.083 4.06 | 2.583 40.56 | 4.083 5.41 | 5.58 2.70  
1.167 4.06 | 2.667 40.56 | 4.167 5.41 | 5.67 2.70  
1.250 4.06 | 2.750 73.01 | 4.250 5.41 | 5.75 2.70  
1.333 4.06 | 2.833 73.01 | 4.333 5.41 | 5.83 2.70  
1.417 4.06 | 2.917 105.46 | 4.417 5.41 | 5.92 2.70  
1.500 4.06 | 3.000 105.46 | 4.500 5.41 | 6.00 2.70  
Max.Eff.Inten.(mm/hr)= 105.46 73.92  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 7.11 (ii) 16.92 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.17 0.06

\*TOTALS\*  
PEAK FLOW (cms)= 4.65 2.44 6.334 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 28.72 40.55  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.42 0.60

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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  
ID1= 1 ( 0507): 498.20 17.456 3.33 33.27  
+ ID2= 2 ( 5072): 48.90 6.334 3.00 40.55  
=====  
ID = 3 ( 0122): 547.10 20.992 3.25 33.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5402) Area (ha)= 9.40  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.70	4.70
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	250.33	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
TIME FLOW | TIME FLOW | TIME FLOW | TIME FLOW  
hrs cms | hrs cms | hrs cms | hrs cms  
0.00 0.00 | 31.33 0.10 | 62.67 0.25 | 94.00 0.26  
0.08 0.00 | 31.42 0.10 | 62.75 0.25 | 94.08 0.26  
0.17 0.00 | 31.50 0.10 | 62.83 0.25 | 94.17 0.25  
0.25 0.00 | 31.58 0.10 | 62.92 0.25 | 94.25 0.25  
0.33 0.00 | 31.67 0.10 | 63.00 0.25 | 94.33 0.25  
0.42 0.00 | 31.75 0.10 | 63.08 0.25 | 94.42 0.25  
0.50 0.00 | 31.83 0.10 | 63.17 0.25 | 94.50 0.25

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
0.083	2.70	1.583	6.76	3.083	14.87	4.58	4.06
0.167	2.70	1.667	6.76	3.167	14.87	4.67	4.06
0.250	2.70	1.750	6.76	3.250	14.87	4.75	4.06
0.333	2.70	1.833	6.76	3.333	14.87	4.83	4.06
0.417	2.70	1.917	6.76	3.417	14.87	4.92	4.06
0.500	2.70	2.000	6.76	3.500	14.87	5.00	4.06
0.583	4.06	2.083	8.11	3.583	6.76	5.08	2.70
0.667	4.06	2.167	8.11	3.667	6.76	5.17	2.70
0.750	4.06	2.250	8.11	3.750	6.76	5.25	2.70
0.833	4.06	2.333	8.11	3.833	6.76	5.33	2.70
0.917	4.06	2.417	8.11	3.917	6.76	5.42	2.70
1.000	4.06	2.500	8.11	4.000	6.76	5.50	2.70
1.083	4.06	2.583	40.56	4.083	5.41	5.58	2.70
1.167	4.06	2.667	40.56	4.167	5.41	5.67	2.70
1.250	4.06	2.750	73.01	4.250	5.41	5.75	2.70
1.333	4.06	2.833	73.01	4.333	5.41	5.83	2.70
1.417	4.06	2.917	105.46	4.417	5.41	5.92	2.70
1.500	4.06	3.000	105.46	4.500	5.41	6.00	2.70

Max.Eff.Inten.(mm/hr)= 105.46 50.94  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 4.34 (ii) 15.72 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.23 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 0.93 0.39 1.198 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 61.60 23.29 36.70  
TOTAL RAINFALL (mm)= 67.60 67.60 67.60  
RUNOFF COEFFICIENT = 0.91 0.34 0.54

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STORE HYD( 1505) | AREA (ha)= 30.00  
ID= 1 DT= 5.0min | QPEAK (cms)= 0.78  
TPEAK (hrs)= 15.58  
VOLUME (mm)= 402.14

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
hrs	cms	hrs	cms	hrs	cms	hrs	cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25

Table with 10 columns of numerical data. Values range from 0.58 to 4.67. The 10th column values range from 0.17 to 0.18.

Table with 10 columns of numerical data. Values range from 4.75 to 8.83. The 10th column values range from 0.17 to 0.18.

Table with 10 columns of numerical data. Values range from 8.92 to 13.00. The 10th column values range from 0.16 to 0.14.

Table with 10 columns of numerical data. Values range from 13.08 to 17.17. The 10th column values range from 0.14 to 0.13.





Table with 10 columns and 49 rows. Columns contain numerical values ranging from 18.50 to 22.58. Each row contains 10 data points.

Table with 10 columns and 38 rows. Columns contain numerical values ranging from 26.83 to 30.92. Each row contains 10 data points.

Table with 14 columns and 49 rows. Columns contain numerical values ranging from 22.67 to 26.75. Each row contains 14 data points.

Simulation output report for Smart City Water Inc. Includes input/output filenames, copyright information (2007-2022), date (04-10-2024), time (01:25:36), user name, and comments. The main comment reads: \*\* SIMULATION : 25yrI16.stm \*\*

READ STORM  
Ptotal= 81.60 mm

Filename: C:\Users\jannaormond\AppData\Local\Temp\5b66f7bc-e58d-45d3-b0f6-6b3e1edcbf8b\0006e36  
Comments: Mount Hope-6 hour SCS Distribution Desig

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.00	3.26	1.50	8.16	3.00	17.95	4.50	4.90
0.17	3.26	1.67	8.16	3.17	17.95	4.67	4.90
0.33	3.26	1.83	8.16	3.33	17.95	4.83	4.90
0.50	4.90	2.00	9.79	3.50	8.16	5.00	3.26
0.67	4.90	2.17	9.79	3.67	8.16	5.17	3.26
0.83	4.90	2.33	9.79	3.83	8.16	5.33	3.26
1.00	4.90	2.50	48.96	4.00	6.53	5.50	3.26
1.17	4.90	2.67	88.13	4.17	6.53	5.67	3.26
1.33	4.90	2.83	127.30	4.33	6.53	5.83	3.26

CALIB  
NASHYD ( 5011)  
ID= 1 DT= 5.0 min

Area (ha)= 80.20 Curve Number (CN)= 65.0  
Ia (mm)= 8.00 # of Linear Res.(N)= 3.00  
U.H. Tp(hrs)= 0.85

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26

1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Unit Hyd Qpeak (cms)= 3.621

PEAK FLOW (cms)= 2.505 (i)  
TIME TO PEAK (hrs)= 3.833  
RUNOFF VOLUME (mm)= 25.750  
TOTAL RAINFALL (mm)= 81.600  
RUNOFF COEFFICIENT = 0.316

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5012)  
ID= 1 DT= 5.0 min

Area (ha)= 39.40  
Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 14.97 24.43  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 512.51 40.00  
Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 73.75  
over (min) 5.00 20.00  
Storage Coeff. (min)= 6.18 (ii) 16.00 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.19 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 3.09 2.48 4.800 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 30.20 41.09  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.37 0.50

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. 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 ( 0100)  
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5011):	80.20	2.505	3.83	25.75
+ ID2= 2 ( 5012):	39.40	4.800	3.00	41.09
ID = 3 ( 0100):	119.60	5.365	3.00	30.80

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
IN= 2----> OUT= 1

Routing time step (min)= 5.00

<----- DATA FOR SECTION (1537.5) ----->

Distance	Elevation	Manning	
0.00	89.30	0.1100	
4.20	89.28	0.1100	
9.03	88.80	0.1100	
21.55	88.78	0.1100	
29.06	88.24	0.1100	
39.87	87.83	0.1100	
55.54	87.84	0.1100 / 0.0700	Main Channel
57.54	86.84	0.0700	Main Channel
59.04	86.84	0.0700	Main Channel
61.04	87.84	0.0700 / 0.1100	Main Channel
74.10	87.86	0.1100	
87.72	88.07	0.1100	

101.34 88.18 0.1100  
113.53 88.23 0.1100  
128.57 88.32 0.1100  
142.19 88.61 0.1100  
155.81 88.53 0.1100  
183.05 88.85 0.1100  
187.19 88.84 0.1100  
211.21 88.88 0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.499E+04	4.5	0.93	21.56
1.21	88.05	.150E+05	7.1	0.96	20.43
1.33	88.17	.233E+05	10.6	0.98	19.49
1.44	88.28	.346E+05	15.5	0.99	18.78
1.56	88.40	.484E+05	22.8	0.99	18.23
1.67	88.51	.634E+05	32.1	0.99	17.79
1.79	88.63	.807E+05	41.2	0.99	17.42
1.90	88.74	.101E+06	54.6	0.99	17.11
2.02	88.86	.124E+06	64.7	0.99	16.84

<---- hydrograph ----> <-pipe / channel-->  
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
INFLOW : ID= 2 ( 0100) 119.60 5.36 3.00 30.80 1.14 0.60  
OUTFLOW: ID= 1 ( 0502) 119.60 3.82 3.83 30.80 1.05 0.73

CALIB  
STANDHYD ( 5022)  
ID= 1 DT= 5.0 min

Area (ha)= 51.10  
Total Imp(%)= 48.00 Dir. Conn.(%)= 34.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 24.53 26.57  
Dep. Storage (mm)= 1.50 8.00  
Average Slope (%)= 1.00 1.00

Length (m) = 583.67 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 72.26  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 6.69 (ii) 16.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

PEAK FLOW (cms)= 5.60 2.60 7.381 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 80.10 28.64 46.14  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.98 0.35 0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0102) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0502): 119.60 3.820 3.83 30.80  
 + ID2= 2 ( 5022): 51.10 7.381 3.00 46.14  
 ID= 3 ( 0102): 170.70 9.372 3.00 35.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0503) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning
0.00	86.78	0.0900
25.34	87.17	0.0900
68.44	87.04	0.0900
117.13	86.81	0.0900
125.36	85.21	0.0900 /0.0700
127.36	84.21	0.0700
128.86	84.21	0.0700
130.86	85.21	0.0700 /0.0900
131.88	86.36	0.0900
140.63	86.77	0.0900
168.26	86.90	0.0900
169.81	87.10	0.0900
202.11	87.50	0.0900
239.06	87.35	0.0900
270.29	87.83	0.0900
283.90	87.90	0.0900
297.51	87.86	0.0900
324.73	87.89	0.0900
351.95	87.78	0.0900
388.59	87.46	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60

2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0102) 170.70 9.37 3.00 35.39 1.56 1.24  
 OUTFLOW: ID= 1 ( 0503) 170.70 8.46 3.08 35.39 1.49 1.21

CALIB  
 | STANDHYD ( 5032) | Area (ha)= 13.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.49 3.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26

| ADD HYD ( 0104) |  
 | 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0503): 170.70 8.464 3.08 35.39  
 + ID2= 2 ( 5032): 13.80 3.609 3.00 63.18  
 ID= 3 ( 0104): 184.50 11.601 3.00 37.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0504) |  
 | IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900

169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

| STANHYD ( 5042) | Area (ha)= 7.70  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

Surface Area (ha)= 5.77 IMPERVIOUS PERVIOUS (i)  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 226.57 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRAVEL TIME TABLE					
DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

<--- hydrograph ---> <--- pipe / channel --->  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)  
 INFLOW: ID= 2 ( 0104) 184.50 11.60 3.00 37.47 0.86 0.36  
 OUTFLOW: ID= 1 ( 0504) 184.50 8.72 3.17 37.47 0.82 0.34

Max.Eff.Inten.(mm/hr)= 127.30 99.16  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.79 (ii) 12.51 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.08

PEAK FLOW (cms)= 1.73 0.31 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 1.988 (iii)  
 RUNOFF VOLUME (mm)= 75.60 35.71 3.00  
 TOTAL RAINFALL (mm)= 81.60 81.60 61.64  
 RUNOFF COEFFICIENT = 0.93 0.44 81.60  
 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:

| CALIB |

CN\* = 68.0 Ia = Dep. 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 ( 0106) |  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504):	184.50	8.722	3.17	37.47
+ ID2= 2 ( 5042):	7.70	1.988	3.00	61.64
ID = 3 ( 0106):	192.20	9.380	3.17	38.44

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| CALIB |

| STANHYD ( 5212) | Area (ha)= 15.70  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

Surface Area (ha)= 11.78 IMPERVIOUS PERVIOUS (i)  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26

1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 117.36  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.69 (ii) 12.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 3.51 0.76 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08 4.156 (iii)  
 RUNOFF VOLUME (mm)= 75.60 43.60 64.72  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.53 0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 |

| STANHYD ( 5202) | Area (ha)= 29.70  
 |ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

Surface Area (ha)= 14.85 IMPERVIOUS PERVIOUS (i)  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 444.97 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26



0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 97.24  
over (min) 5.00 15.00  
Storage Coeff. (min)= 5.68 (ii) 14.47 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.20 0.08

PEAK FLOW (cms)= 3.44 2.22  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 80.10 37.59  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.98 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0521)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
-------	------	--------	-----------	----------	-----------

ID = 3 ( 0114): 237.60 15.235 3.00 41.93

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
-------	------	--------	-----------	----------	-----------

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45

(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

<--- hydrograph ---> <-pipe / channel-->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW: ID= 2 ( 5202)	29.70	5.29	3.00	52.47	0.42	0.39
OUTFLOW: ID= 1 ( 0521)	29.70	2.74	3.17	52.45	0.35	0.33

ADD HYD ( 0113)  
1 + 2 = 3

ID	AREA	QPEAK	TPEAK	R.V.
ID1= 1 ( 0521):	29.70	2.737	3.17	52.45
+ ID2= 2 ( 5212):	15.70	4.156	3.00	64.72
ID = 3 ( 0113):	45.40	6.350	3.00	56.69

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)  
1 + 2 = 3

ID	AREA	QPEAK	TPEAK	R.V.
ID1= 1 ( 0106):	192.20	9.380	3.17	38.44
+ ID2= 2 ( 0113):	45.40	6.350	3.00	56.69

1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

<--- hydrograph ---> <-pipe / channel-->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW: ID= 2 ( 0114)	237.60	15.23	3.00	41.93	0.94	0.62
OUTFLOW: ID= 1 ( 0505)	237.60	14.47	3.08	41.93	0.91	0.61

CALIB  
STANDHYD ( 5052)  
ID= 1 DT= 5.0 min |

Area (ha)=	15.90
Total Imp(%)=	74.00
Dir. Conn.(%)=	65.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	11.77	4.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	325.58	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 93.10  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.71 (ii) 13.65 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 3.50 0.60  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 34.81  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.43

\*TOTALS\*  
 4.002 (iii)  
 3.00  
 61.32  
 81.60  
 0.75

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0108)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0505):	237.60	14.467	3.08	41.93
+ ID2= 2 ( 5052):	15.90	4.002	3.00	61.32
=====				
ID = 3 ( 0108):	253.50	17.093	3.00	43.14

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
 IN= 2--> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning	
0.00	81.42	0.0900	
7.45	81.36	0.0900	
32.34	80.38	0.0900	
45.97	80.05	0.0900	
65.23	79.93	0.0900	
84.49	80.35	0.0900	
113.49	80.02	0.0900	
136.48	80.07	0.0900	
188.81	79.81	0.0900	
197.86	79.25	0.0900 / 0.0700	Main Channel
200.70	78.22	0.0700	Main Channel

Average Slope (%)= 1.00 1.00  
 Length (m)= 279.28 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 106.57  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.30 (ii) 12.77 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 2.60 0.51  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 38.39  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.47

\*TOTALS\*  
 3.026 (iii)  
 3.00  
 62.58  
 81.60  
 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

203.29 79.35 0.0700 / 0.0900 Main Channel  
 204.01 79.67 0.0900  
 236.47 80.40 0.0900  
 277.80 80.48 0.0900  
 305.35 80.37 0.0900  
 346.67 80.41 0.0900  
 387.99 80.33 0.0900  
 415.54 80.53 0.0900  
 447.88 80.49 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

<--- hydrograph ---> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0108) 253.50 17.09 3.00 43.14 1.79 0.87  
 OUTFLOW: ID= 1 ( 0506) 253.50 15.26 3.17 43.14 1.76 0.92

CALIB  
 STANDHYD ( 5062)  
 ID= 1 DT= 5.0 min | Area (ha)= 11.70  
 Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.78 2.92  
 Dep. Storage (mm)= 6.00 8.00

ADD HYD ( 0110)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0506):	253.50	15.257	3.17	43.14
+ ID2= 2 ( 5062):	11.70	3.026	3.00	62.58
=====				
ID = 3 ( 0110):	265.20	16.346	3.17	44.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5102)  
 ID= 1 DT= 5.0 min | Area (ha)= 1.70  
 Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.09 0.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 106.46 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 87.16

over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.41 (ii) 11.59 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.30 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.31 0.09 0.385 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 32.90 55.10  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.40 0.68

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511) |  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19

1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 101.25  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 2.86 (ii) 11.50 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.28 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 0.61 0.16 0.744 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 75.60 37.63 59.65  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.46 0.73

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0117) |  
 1 + 2 = 3 | AREA OPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)

ID1= 1 ( 0511): 1.70 0.279 3.00 55.08  
 + ID2= 2 ( 5112): 3.00 0.744 3.00 59.65

=====  
 ID = 3 ( 0117): 4.70 1.023 3.00 58.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512) |  
 IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning	
0.00	80.80	0.0900	
9.73	80.46	0.0900	
14.10	82.04	0.0900	
17.18	82.28	0.0900	
41.13	82.12	0.0900 / 0.0700	Main Channel

1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ----> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 5102) 1.70 0.39 3.00 55.10 0.07 0.24  
 OUTFLOW: ID= 1 ( 0511) 1.70 0.28 3.00 55.08 0.05 0.24

CALIB |  
 STANDHYD ( 5112) | Area (ha)= 3.00  
 ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.07	0.93
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	141.42	40.00
Mannings n =	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26

46.88	79.71	0.0700	Main Channel
51.41	80.90	0.0700 / 0.0900	Main Channel
94.29	80.56	0.0900	
175.64	80.72	0.0900	
192.09	80.85	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ----> <-pipe / channel->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)

INFLOW : ID= 2 ( 0117) 4.70 1.02 3.00 58.00 0.81 0.43  
 OUTFLOW: ID= 1 ( 0512) 4.70 0.63 3.00 57.94 0.69 0.43

CALIB |  
 STANDHYD ( 5122) | Area (ha)= 3.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.65	1.25
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	161.25	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30  
 over (min) 5.00  
 Storage Coeff. (min)= 3.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00  
 Unit Hyd. peak (cms)= 0.27

PEAK FLOW (cms)= 0.78  
 TIME TO PEAK (hrs)= 3.00  
 RUNOFF VOLUME (mm)= 75.60  
 TOTAL RAINFALL (mm)= 81.60  
 RUNOFF COEFFICIENT = 0.93

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0119)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3				

Unit Hyd Qpeak (cms)= 2.027  
 PEAK FLOW (cms)= 1.276 (i)  
 TIME TO PEAK (hrs)= 3.833  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB	Area (ha)	Dir. Conn.(%)
STANDHYD ( 6012)	11.00	16.00
ID= 1 DT= 5.0 min	Total Imp(%)= 28.00	

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.08 7.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 270.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 52.38

ID	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0512):	4.70	0.634	3.08	57.94
+ ID2= 2 ( 5122):	3.90	0.952	3.00	59.19
ID = 3 ( 0119):	8.60	1.541	3.00	58.50

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0110):	265.20	16.346	3.17	44.00
+ ID2= 2 ( 0119):	8.60	1.541	3.00	58.50
ID = 3 ( 0120):	273.80	17.317	3.00	44.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6011)	44.10	62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.83	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.22 (ii) 15.47 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.24 0.07

PEAK FLOW (cms)= 0.60 0.69 1.070 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 75.60 26.83 34.64  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.33 0.42

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING:FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 6011):	44.10	1.276	3.83	23.63
+ ID2= 2 ( 6012):	11.00	1.070	3.00	34.64
ID = 3 ( 0124):	55.10	1.597	3.50	25.82

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB	Area (ha)	Curve Number (CN)
NASHYD ( 6021)	43.60	62.0
ID= 1 DT= 5.0 min	Ia (mm)= 8.00	# of Linear Res.(N)= 3.00
	U.H. Tp(hrs)= 0.95	

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90

0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.141 (i)  
 TIME TO PEAK (hrs)= 4.000  
 RUNOFF VOLUME (mm)= 23.626  
 TOTAL RAINFALL (mm)= 81.600  
 RUNOFF COEFFICIENT = 0.290

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) Area (ha)= 12.90  
 ID= 1 DT= 5.0 min Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90

0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 53.84  
 over (min) = 5.00 20.00  
 Storage Coeff. (min)= 4.42 (ii) 15.55 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.07

PEAK FLOW (cms)= 1.01 0.74 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.17 1.520 (iii)  
 RUNOFF VOLUME (mm)= 75.60 27.16 38.30  
 TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.33 0.47

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0121): 43.60 1.141 4.00 23.63  
 + ID2= 2 ( 0122): 12.90 1.520 3.00 38.30  
 ID = 3 ( 0125): 56.50 1.733 3.00 26.98

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3  
 AREA QPEAK TPEAK R.V.

(ha) (cms) (hrs) (mm)  
 ID1= 1 ( 0124): 55.10 1.597 3.50 25.82  
 + ID2= 2 ( 0125): 56.50 1.733 3.00 26.98  
 ID = 3 ( 0126): 111.60 3.093 3.00 26.41

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning	
0.00	92.58	0.1400	
8.54	92.59	0.1400	
22.11	92.47	0.1400	
48.74	91.83	0.1400	
67.59	91.58	0.1400	
86.45	91.21	0.1400	
103.50	90.80	0.1400	
118.09	90.23	0.1400	
127.84	90.09	0.1400 / 0.0700	Main Channel
129.84	89.59	0.0700	Main Channel
130.34	90.09	0.0700 / 0.1400	Main Channel
140.57	90.14	0.1400	
161.87	90.11	0.1400	
177.03	90.04	0.1400	
188.67	89.87	0.1400	
199.59	90.31	0.1400	
212.02	90.96	0.1400	
225.58	91.35	0.1400	
252.71	91.66	0.1400	
274.11	91.86	0.1400	

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71

2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<---- hydrograph ----> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0126) 111.60 3.09 3.00 26.41 0.65 0.23  
 OUTFLOW : ID= 1 ( 0603) 111.60 2.16 4.58 26.40 0.59 0.22

CALIB  
 STANDHYD ( 6032) Area (ha)= 34.60  
 ID= 1 DT= 5.0 min Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 16.26 18.34  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 480.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26

1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 95.24  
over (min) 5.00 15.00  
Storage Coeff. (min)= 5.95 (ii) 14.81 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.19 0.08

PEAK FLOW (cms)= 3.64 2.65  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 80.10 37.28  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.98 0.46

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 6102) Area (ha)= 21.10  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

Surface Area	(ha)=	10.55	10.55
Dep. Storage	(mm)=	1.50	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	375.06	40.00
Mannings n	=	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26

0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 92.51  
over (min) 5.00 15.00  
Storage Coeff. (min)= 5.13 (ii) 14.09 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.21 0.08

PEAK FLOW (cms)= 2.48 1.51  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 80.10 35.76  
TOTAL RAINFALL (mm)= 81.60 81.60  
RUNOFF COEFFICIENT = 0.98 0.44

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 70.0 Ia = Dep. 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 ( 0128)  
1 + 2 = 3

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 1 ( 0603):	111.60	2.157	4.58	26.40
+ ID2= 2 ( 6032):	34.60	5.841	3.00	50.98
ID = 3 ( 0128):	146.20	6.396	3.00	32.22

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
3 + 2 = 1

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	
ID1= 3 ( 0128):	146.20	6.396	3.00	32.22
+ ID2= 2 ( 6102):	21.10	3.731	3.00	51.28

ID = 1 ( 0128): 167.30 10.127 3.00 34.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
IN= 2---> OUT= 1 Routing time step (min)= 5.00

----- DATA FOR SECTION (1414.9) -----

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700 Main Channel
166.55	83.78	0.0700 Main Channel
168.05	84.78	0.0700 / 0.1100 Main Channel
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82

3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

hydrograph <---> <-pipe / channel-->

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW : ID= 2 ( 0128)	167.30	10.13	3.00	34.62	2.68	0.08
OUTFLOW: ID= 1 ( 0604)	167.30	3.47	3.08	34.61	2.27	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
STANDHYD ( 6042) Area (ha)= 24.00  
ID= 1 DT= 5.0 min Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

Surface Area	(ha)=	18.72	5.28
Dep. Storage	(mm)=	6.00	8.00
Average Slope	(%)=	1.00	1.00
Length	(m)=	400.00	40.00
Mannings n	=	0.013	0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26

1.500 4.90 | 3.000 127.30 | 4.500 6.53 | 6.00 3.26

Max.Eff.Inten.(mm/hr)= 127.30 129.18  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.33 (ii) 10.32 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.21 0.09

PEAK FLOW (cms)= 5.53 1.23  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 46.55  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.57 0.82

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 0130)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0604):	167.30	3.470	3.08	34.61
+ ID2= 2 ( 6042):	24.00	6.596	3.00	66.59
ID = 3 ( 0130):	191.30	9.752	3.00	38.63

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2---> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100

Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 275.68 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 111.68  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.26 (ii) 12.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.08

PEAK FLOW (cms)= 2.42 0.59  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 41.50  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.51 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 75.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel-->

INFLOW : ID= 2 ( 0130)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
191.30	4.650	9.75	3.00	38.63	1.23	0.31
OUTFLOW: ID= 1 ( 0605)	191.30	4.65	3.25	38.62	0.97	0.32

CALIB  
 STANDHYD ( 6112) | Area (ha)= 11.40  
 ID= 1 DT= 5.0 min | Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

Surface Area (ha)= IMPERVIOUS 8.21 PERVIOUS (i) 3.19

ADD HYD ( 0139)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0605):	191.30	4.650	3.25	38.62
+ ID2= 2 ( 6112):	11.40	2.916	3.00	62.64
ID = 3 ( 0139):	202.70	6.249	3.00	39.97

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 6052) | Area (ha)= 15.90  
 ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

Surface Area (ha)= IMPERVIOUS 11.77 PERVIOUS (i) 4.13  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 325.58 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 88.54  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.71 (ii) 13.83 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

PEAK FLOW (cms)= 3.50 0.57  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 33.11  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.41

\*TOTALS\*  
 3.971 (iii)  
 3.00  
 60.73  
 81.60  
 0.74

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0139):	202.70	6.249	3.00	39.97
+ ID2= 2 ( 6052):	15.90	3.971	3.00	60.73
ID = 3 ( 0132):	218.60	10.220	3.00	41.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning
0.00	81.70	0.1100
3.84	81.72	0.1100
5.87	80.72	0.1100
9.38	81.42	0.1100
49.64	81.07	0.1100
80.61	80.72	0.1100
85.61	81.14	0.1100
93.32	80.00	0.1100
95.04	80.45	0.1100
102.72	80.66	0.1100
110.13	78.93	0.1100 / 0.0700

Main Channel

Average Slope (%)= 1.00 1.00  
 Length (m)= 196.64 40.00  
 Mannings n = 0.013 0.250

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	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 82.95  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.48 (ii) 12.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.26 0.08

PEAK FLOW (cms)= 1.13 0.26  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 75.60 32.22  
 TOTAL RAINFALL (mm)= 81.60 81.60  
 RUNOFF COEFFICIENT = 0.93 0.39

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

118.05 78.63 0.0700 Main Channel  
 124.40 78.89 0.0700 / 0.1100 Main Channel  
 132.18 79.61 0.1100  
 139.34 79.23 0.1100  
 144.67 79.43 0.1100  
 149.63 79.98 0.1100  
 153.42 79.79 0.1100  
 158.56 80.58 0.1100  
 176.89 81.15 0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 0132) 218.60 10.22 3.00 41.48 0.83 0.75  
 OUTFLOW: ID= 1 ( 0530) 218.60 8.09 3.08 41.48 0.75 0.73

CALIB  
 STANDHYD ( 5302)  
 ID= 1 DT= 5.0 min | Area (ha)= 5.80  
 Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 3.83 1.97  
 Dep. Storage (mm)= 6.00 8.00

ADD HYD ( 0134)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0530):	218.60	8.092	3.08	41.48
+ ID2= 2 ( 5302):	5.80	1.344	3.00	56.51
ID = 3 ( 0134):	224.40	8.789	3.00	41.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0120):	273.80	17.317	3.00	44.45
+ ID2= 2 ( 0134):	224.40	8.789	3.00	41.87
ID = 3 ( 0135):	498.20	26.106	3.00	43.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900
27.28	79.26	0.0900
34.16	79.13	0.0900
40.79	79.05	0.0900
47.58	79.05	0.0900
54.30	79.07	0.0900
60.87	79.24	0.0900
71.39	79.48	0.0900
73.53	78.96	0.0900
76.96	78.07	0.0900
82.21	77.08	0.0900 / 0.0700
85.82	76.28	0.0700
89.97	76.89	0.0700
91.35	77.38	0.0700 / 0.0900
95.27	78.68	0.0900
98.44	79.63	0.0900
102.89	79.89	0.0900



TRAVEL TIME TABLE					
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

hydrograph					<-pipe / channel->	
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0135)	498.20	26.11	3.00	43.29	2.39	0.97
OUTFLOW : ID= 1 ( 0507)	498.20	22.63	3.33	43.29	2.24	0.94

CALIB  
STANDHYD ( 5072)  
ID= 1 DT= 5.0 min

Area (ha)= 48.90  
Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	24.45	24.45
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	570.96	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.26	1.583	8.16	3.083	17.95	4.58	4.90
0.167	3.26	1.667	8.16	3.167	17.95	4.67	4.90
0.250	3.26	1.750	8.16	3.250	17.95	4.75	4.90
0.333	3.26	1.833	8.16	3.333	17.95	4.83	4.90
0.417	3.26	1.917	8.16	3.417	17.95	4.92	4.90
0.500	3.26	2.000	8.16	3.500	17.95	5.00	4.90
0.583	4.90	2.083	9.79	3.583	8.16	5.08	3.26
0.667	4.90	2.167	9.79	3.667	8.16	5.17	3.26
0.750	4.90	2.250	9.79	3.750	8.16	5.25	3.26
0.833	4.90	2.333	9.79	3.833	8.16	5.33	3.26
0.917	4.90	2.417	9.79	3.917	8.16	5.42	3.26
1.000	4.90	2.500	9.79	4.000	8.16	5.50	3.26
1.083	4.90	2.583	48.96	4.083	6.53	5.58	3.26
1.167	4.90	2.667	48.96	4.167	6.53	5.67	3.26
1.250	4.90	2.750	88.13	4.250	6.53	5.75	3.26
1.333	4.90	2.833	88.13	4.333	6.53	5.83	3.26
1.417	4.90	2.917	127.30	4.417	6.53	5.92	3.26
1.500	4.90	3.000	127.30	4.500	6.53	6.00	3.26

Max.Eff.Inten.(mm/hr)= 127.30 99.72  
over (min) = 5.00 20.00  
Storage Coeff. (min)= 6.60 (ii) 15.30 (iii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.18 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 5.69 3.51 8.194 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 75.60 39.14 52.26  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.48 0.64

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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 ( 0507):	498.20	22.628	3.33	43.29
+ ID2= 2 ( 5072):	48.90	8.194	3.00	52.26
ID = 3 ( 0122):	547.10	27.218	3.25	44.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5402)  
ID= 1 DT= 5.0 min

Area (ha)= 9.40  
Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	4.70	4.70
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	250.33	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------	------	------

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STORE HYD ( 1505)			
ID= 1 DT= 5.0min	AREA (ha)=	QPEAK (cms)=	TPEAK (hrs)=
	30.00	0.78	15.58
			VOLUME (mm)= 402.14

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
hrs	cms	hrs	cms	hrs	cms	hrs	cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25
1.08	0.00	32.42	0.10	63.75	0.24	95.08	0.25
1.17	0.00	32.50	0.10	63.83	0.23	95.17	0.24
1.25	0.00	32.58	0.10	63.92	0.23	95.25	0.21
1.33	0.00	32.67	0.10	64.00	0.23	95.33	0.25
1.42	0.00	32.75	0.10	64.08	0.23	95.42	0.22
1.50	0.00	32.83	0.10	64.17	0.23	95.50	0.23
1.58	0.00	32.92	0.10	64.25	0.24	95.58	0.22
1.67	0.00	33.00	0.10	64.33	0.23	95.67	0.24
1.75	0.00	33.08	0.10	64.42	0.23	95.75	0.26
1.83	0.00	33.17	0.10	64.50	0.23	95.83	0.24
1.92	0.00	33.25	0.11	64.58	0.23	95.92	0.23
2.00	0.00	33.33	0.11	64.67	0.24	96.00	0.24
2.08	0.00	33.42	0.11	64.75	0.24	96.08	0.24
2.17	0.00	33.50	0.11	64.83	0.24	96.17	0.24
2.25	0.00	33.58	0.11	64.92	0.24	96.25	0.24
2.33	0.00	33.67	0.11	65.00	0.24	96.33	0.24
2.42	0.00	33.75	0.11	65.08	0.23	96.42	0.24
2.50	0.00	33.83	0.11	65.17	0.23	96.50	0.24
2.58	0.00	33.92	0.11	65.25	0.23	96.58	0.23

Max.Eff.Inten.(mm/hr)= 127.30 83.58  
over (min) = 5.00 15.00  
Storage Coeff. (min)= 4.02 (ii) 13.36 (iii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 1.13 0.62 1.641 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 75.60 32.32 47.47  
TOTAL RAINFALL (mm)= 81.60 81.60 81.60  
RUNOFF COEFFICIENT = 0.93 0.40 0.58









U.H. Tp(hrs)= 0.85

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME (hrs), RAIN (mm/hr), and two sets of transformed hyetograph data (TIME, RAIN).

Unit Hyd Qpeak (cms) = 3.621

PEAK FLOW (cms) = 0.550 (i)
TIME TO PEAK (hrs) = 3.917
RUNOFF VOLUME (mm) = 6.078
TOTAL RAINFALL (mm) = 40.032
RUNOFF COEFFICIENT = 0.152

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB STANDHYD ( 5012) Area (ha) = 39.40
ID= 1 DT= 5.0 min Total Imp(%) = 38.00 Dir. Conn.(%) = 24.00

Table with 3 columns: IMPERVIOUS, PERVIOUS (i), and values for Surface Area, Dep. Storage, Average Slope, Length, and Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME (hrs), RAIN (mm/hr), and two sets of transformed hyetograph data.

Max.Eff.Inten.(mm/hr)= 61.93 over (min) 10.00
Storage Coeff. (min)= 8.25 (ii) 27.87 (ii)
Unit Hyd. Tpeak (min)= 10.00 30.00
Unit Hyd. peak (cms)= 0.13 0.04

PEAK FLOW (cms) = 1.32 0.43 \*TOTALS\* 1.476 (iii)
TIME TO PEAK (hrs) = 3.00 3.42 3.00
RUNOFF VOLUME (mm) = 34.03 7.74 14.05
TOTAL RAINFALL (mm) = 40.03 40.03 40.03
RUNOFF COEFFICIENT = 0.85 0.19 0.35

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 65.0 Ia = Dep. 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 ( 0100)
1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

ID1= 1 ( 5011): 80.20 0.550 3.92 6.08
+ ID2= 2 ( 5012): 39.40 1.476 3.00 14.05
ID = 3 ( 0100): 119.60 1.576 3.08 8.70

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Table with 6 columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s).

ROUTE CHN( 0502) IN= 2---> OUT= 1 Routing time step (min) = 5.00

Table with 3 columns: Distance, Elevation, Manning, and Main Channel.

hydrograph <---> <-pipe / channel->
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm) MAX DEPTH (m) MAX VEL (m/s)
INFLOW: ID= 2 ( 0100) 119.60 1.58 3.08 8.70 0.72 0.75
OUTFLOW: ID= 1 ( 0502) 119.60 1.01 3.67 8.70 0.57 0.66

CALIB STANDHYD ( 5022) Area (ha) = 51.10
ID= 1 DT= 5.0 min Total Imp(%) = 48.00 Dir. Conn.(%) = 34.00

Table with 3 columns: IMPERVIOUS, PERVIOUS (i), and values for Surface Area, Dep. Storage, Average Slope, Length, and Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with 8 columns: TIME (hrs), RAIN (mm/hr), and two sets of transformed hyetograph data.

Table with 6 columns: DEPTH (m), ELEV (m), VOLUME (cu.m), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min).

1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59  
 1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

Max.Eff.Inten.(mm/hr)= 61.93 12.66  
 over (min) 10.00 30.00

Storage Coeff. (min)= 8.92 (ii) 28.78 (ii)  
 Unit Hyd. Tpeak (min)= 10.00 30.00  
 Unit Hyd. peak (cms)= 0.12 0.04

PEAK FLOW (cms)= 2.37 0.45 \*TOTALS\* 2.535 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 38.53 7.27 17.90  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.96 0.18 0.45

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0102)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0502):	119.60	1.014	3.67	8.70
+ ID2= 2 ( 5022):	51.10	2.535	3.00	17.90
ID = 3 ( 0102):	170.70	3.144	3.08	11.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0503)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	

Surface Area (ha)= 10.49 3.31  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 303.32 40.00  
 Mannings n = 0.013 0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 20.79  
 over (min) 5.00 25.00

Storage Coeff. (min)= 6.02 (ii) 22.31 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.19 0.05

PEAK FLOW (cms)= 1.48 0.11 \*TOTALS\* 1.529 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.67 26.32  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.27 0.66

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. Storage (Above)  
 (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.  
 (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

140.63 86.77 0.0900  
 168.26 86.90 0.0900  
 169.81 87.10 0.0900  
 202.11 87.50 0.0900  
 239.06 87.35 0.0900  
 270.29 87.83 0.0900  
 283.90 87.90 0.0900  
 297.51 87.86 0.0900  
 324.73 87.89 0.0900  
 351.95 87.78 0.0900  
 388.59 87.46 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	170.70	3.14	3.08	11.45	1.00	0.90
OUTFLOW: ID= 1 ( 0503)	170.70	2.81	3.17	11.45	0.94	0.86

CALIB | STANDHYD ( 5032) | Area (ha)= 13.80  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 76.00 Dir. Conn.(%)= 67.00

IMPERVIOUS PERVIOUS (i)

ADD HYD ( 0104)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0503):	170.70	2.806	3.17	11.45
+ ID2= 2 ( 5032):	13.80	1.529	3.00	26.32
ID = 3 ( 0104):	184.50	3.806	3.00	12.57

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)  
 IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	
513.93	82.96	0.0900	
526.85	83.23	0.0900	
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.32	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13

0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

```

<---- hydrograph ----> <-pipe / channel->
AREA  QPEAK  TPEAK  R.V.  MAX DEPTH  MAX VEL
(ha)  (cms)  (hrs)  (mm)  (m)  (m/s)
INFLOW : ID= 2 ( 0104) 184.50  3.81  3.00  12.57  0.69  0.32
OUTFLOW: ID= 1 ( 0504) 184.50  2.94  3.25  12.57  0.65  0.31

```

0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59
Max.Eff.Inten. (mm/hr)=	61.93	19.38					
over (min)	5.00	25.00					
Storage Coeff. (min)=	5.05 (ii)	21.81 (ii)					
Unit Hyd. Tpeak (min)=	5.00	25.00					
Unit Hyd. peak (cms)=	0.21	0.05					
PEAK FLOW (cms)=	0.82	0.06	*TOTALS*				
TIME TO PEAK (hrs)=	3.00	3.33	0.847 (iii)				
RUNOFF VOLUME (mm)=	34.03	9.84	3.00				
TOTAL RAINFALL (mm)=	40.03	40.03	25.56				
RUNOFF COEFFICIENT =	0.85	0.25	40.03				
			0.64				

```

| CALIB |
| STANDHYD ( 5042) | Area (ha)= 7.70
| ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

```

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	5.77	1.92	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	226.57	40.00	
Mannings n	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.59 | 1.583 3.97 | 3.083 8.73 | 4.58 2.38
0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38
0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38
0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38
0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38
0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38
0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59
0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59
0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59
0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59

```

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0106) |
| 1 + 2 = 3 |

```

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0504): 184.50	2.944	3.25	12.57
+ ID2= 2 ( 5042): 7.70	0.847	3.00	25.56
ID = 3 ( 0106): 192.20	3.159	3.25	13.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| CALIB |
| STANDHYD ( 5212) | Area (ha)= 15.70
| ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

```

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	11.78	3.93	
Dep. Storage (mm)=	6.00	8.00	
Average Slope (%)=	1.00	1.00	

Length (m)=	323.52	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.59 | 1.583 3.97 | 3.083 8.73 | 4.58 2.38
0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38
0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38
0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38
0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38
0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38
0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59
0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59
0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59
0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59
0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59
1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59
1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59
1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59
1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59
1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59
1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59
1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

```

Max.Eff.Inten. (mm/hr)=	61.93	29.70
over (min)	5.00	25.00
Storage Coeff. (min)=	6.26 (ii)	20.38 (ii)
Unit Hyd. Tpeak (min)=	5.00	25.00
Unit Hyd. peak (cms)=	0.19	0.05

PEAK FLOW (cms)=	1.64	0.16	1.726 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	12.97	26.87
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.32	0.67

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 77.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| STANDHYD ( 5202) | Area (ha)= 29.70
| ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

```

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	14.85	14.85	
Dep. Storage (mm)=	1.50	8.00	
Average Slope (%)=	1.00	1.00	
Length (m)=	444.97	40.00	
Mannings n	0.013	0.250	

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN
hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr
0.083 1.59 | 1.583 3.97 | 3.083 8.73 | 4.58 2.38
0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38
0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38
0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38
0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38
0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38
0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59
0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59
0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59
0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59
0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59
1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59
1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59
1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59
1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59
1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59
1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59
1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59

```

Max.Eff.Inten. (mm/hr)=	61.93	19.19
over (min)	10.00	25.00
Storage Coeff. (min)=	7.58 (ii)	24.40 (ii)
Unit Hyd. Tpeak (min)=	10.00	25.00
Unit Hyd. peak (cms)=	0.13	0.05

PEAK FLOW (cms)=	1.48	0.42	*TOTALS*		
TIME TO PEAK (hrs)=	3.00	3.33	1.682 (iii)		
RUNOFF VOLUME (mm)=	38.53	10.45	3.00		
TOTAL RAINFALL (mm)=	40.03	40.03	20.28		
RUNOFF COEFFICIENT =	0.96	0.26	40.03		
			0.51		

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. Storage (Above)

```

| CALIB |

```



- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

```

| ROUTE CHN( 0521) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00
-----
<----- DATA FOR SECTION ( 815.4) ----->
Distance Elevation Manning
415.18 83.86 0.0900
461.15 83.40 0.0900
501.83 83.53 0.0900 / 0.0700 Main Channel
513.93 82.96 0.0700 Main Channel
526.85 83.23 0.0700 / 0.0900 Main Channel
569.63 83.21 0.0900
610.76 83.63 0.0900
663.54 83.88 0.0900

```

```

<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.05 83.00 .378E+02 0.0 0.11 83.81
0.09 83.05 .151E+03 0.0 0.17 52.79
0.14 83.09 .340E+03 0.1 0.22 40.29
0.18 83.14 .605E+03 0.3 0.27 33.26
0.23 83.18 .946E+03 0.5 0.32 28.66
0.27 83.23 .151E+04 0.9 0.33 27.77
0.32 83.27 .323E+04 1.8 0.31 29.51
0.37 83.32 .510E+04 3.2 0.34 26.44
0.42 83.37 .713E+04 5.0 0.38 23.61
0.46 83.42 .934E+04 7.3 0.42 21.44
0.51 83.47 .121E+05 10.0 0.45 20.23
0.56 83.52 .156E+05 13.4 0.47 19.44
0.61 83.57 .196E+05 17.7 0.49 18.52
0.66 83.61 .240E+05 22.8 0.52 17.49
0.71 83.66 .286E+05 28.4 0.54 16.75
0.75 83.71 .336E+05 34.7 0.56 16.14
0.80 83.76 .390E+05 41.8 0.58 15.55
0.85 83.81 .448E+05 49.8 0.60 14.99
0.90 83.86 .510E+05 58.8 0.63 14.46

```

```

<---- hydrograph ----> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 5202) 29.70 1.68 3.00 20.28 0.31 0.31
OUTFLOW: ID= 1 ( 0521) 29.70 0.96 3.25 20.26 0.27 0.32

```

```

481.25 82.81 0.0900
501.51 83.16 0.0900
-----
<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.12 79.13 .418E+03 0.4 0.15 18.59
0.23 79.25 .899E+03 1.3 0.25 11.41
0.35 79.36 .140E+04 2.7 0.33 8.70
0.46 79.48 .191E+04 4.4 0.39 7.22
0.58 79.59 .244E+04 6.5 0.46 6.26
0.69 79.71 .299E+04 8.9 0.51 5.58
0.81 79.82 .355E+04 11.7 0.56 5.08
0.92 79.94 .413E+04 14.7 0.61 4.68
1.04 80.05 .472E+04 18.1 0.65 4.36
1.15 80.17 .533E+04 21.7 0.70 4.09
1.27 80.28 .598E+04 25.7 0.74 3.88
1.38 80.40 .666E+04 29.7 0.76 3.74
1.50 80.51 .740E+04 33.7 0.78 3.67
1.61 80.63 .822E+04 38.1 0.79 3.59
1.73 80.74 .909E+04 43.1 0.81 3.52
1.84 80.86 .100E+05 48.6 0.83 3.45
1.96 80.97 .111E+05 48.4 0.74 3.83
2.07 81.09 .128E+05 43.8 0.59 4.86
2.19 81.21 .155E+05 40.6 0.45 6.35

```

```

<---- hydrograph ----> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0114) 237.60 5.29 3.00 14.89 0.51 0.42
OUTFLOW: ID= 1 ( 0505) 237.60 4.81 3.08 14.89 0.48 0.40

```

```

| CALIB |
| STANDHYD ( 5052) | Area (ha)= 15.90
| ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.77 4.13
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 325.58 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

| ADD HYD ( 0113) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0521): 29.70 0.956 3.25 20.26
+ ID2= 2 ( 5212): 15.70 1.726 3.00 26.87
=====
ID = 3 ( 0113): 45.40 2.386 3.00 22.55

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0114) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0106): 192.20 3.159 3.25 13.09
+ ID2= 2 ( 0113): 45.40 2.386 3.00 22.55
=====
ID = 3 ( 0114): 237.60 5.293 3.00 14.89

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0505) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

```

```

<----- DATA FOR SECTION ( 553.6) ----->
Distance Elevation Manning
0.00 81.24 0.1100
33.01 80.98 0.1100
49.97 81.27 0.1100
54.18 80.35 0.1100
60.88 81.23 0.1100
69.13 79.02 0.1100
92.42 79.04 0.1100
98.70 80.89 0.1100
128.88 81.13 0.1100
199.00 81.23 0.1100
266.11 81.68 0.1100
306.94 81.73 0.1100
331.74 81.55 0.1100 / 0.0700 Main Channel
336.74 80.15 0.0700 Main Channel
346.34 81.64 0.0700 / 0.0900 Main Channel
394.77 81.68 0.0900
431.64 81.44 0.0900
477.44 82.08 0.0900

```

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.59 1.583 3.97 3.083 8.73
0.167 1.59 1.667 3.97 3.167 8.73
0.250 1.59 1.750 3.97 3.250 8.73
0.333 1.59 1.833 3.97 3.333 8.73
0.417 1.59 1.917 3.97 3.417 8.73
0.500 1.59 2.000 3.97 3.500 8.73
0.583 2.38 2.083 4.76 3.583 3.97
0.667 2.38 2.167 4.76 3.667 5.17
0.750 2.38 2.250 4.76 3.750 3.97
0.833 2.38 2.333 4.76 3.833 3.97
0.917 2.38 2.417 4.76 3.917 3.97
1.000 2.38 2.500 4.76 4.000 3.97
1.083 2.38 2.583 23.82 4.083 3.18
1.167 2.38 2.667 23.82 4.167 3.18
1.250 2.38 2.750 42.88 4.250 3.18
1.333 2.38 2.833 42.88 4.333 3.18
1.417 2.38 2.917 61.93 4.417 3.18
1.500 2.38 3.000 61.93 4.500 3.18

```

```

Max.Eff.Inten.(mm/hr)= 61.93 17.84
over (min) = 5.00 25.00
Storage Coeff. (min)= 6.28 (ii) 23.60 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.19 0.05

```

```

*TOTALS*
PEAK FLOW (cms)= 1.64 0.11 1.692 (iii)
TIME TO PEAK (hrs)= 3.00 3.33 3.00
RUNOFF VOLUME (mm)= 34.03 9.46 25.43
TOTAL RAINFALL (mm)= 40.03 40.03 40.03
RUNOFF COEFFICIENT = 0.85 0.24 0.64

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0108) |
| 1 + 2 = 3 | AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0505): 237.60 4.806 3.08 14.89
+ ID2= 2 ( 5052): 15.90 1.692 3.00 25.43
=====

```

ID = 3 ( 0108): 253.50 5.941 3.00 15.55

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506) | IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Table with columns: Distance, Elevation, Manning, and Main Channel. Lists data points from 0.00 to 447.88.

<----- TRAVEL TIME TABLE ----->

Table with columns: DEPTH, ELEV, VOLUME, FLOW RATE, VELOCITY, TRAV.TIME. Lists data points from 0.11 to 1.90.

Table with columns: 2.02, 80.24, .158E+05, 39.7, 0.75, 6.62. Lists data points.

Table with columns: AREA, QPEAK, TPEAK, R.V., MAX DEPTH, MAX VEL. Lists data points for INFLOW and OUTFLOW.

CALIB | STANDHYD ( 5062) | Area (ha)= 11.70 | Total Imp(%)= 75.00 | Dir. Conn.(%)= 65.00

Table with columns: IMPERVIOUS, PERVIOUS (i). Lists Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

Table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Lists data points for transformed hyetograph.

Table with columns: Max.Eff.Inten., Storage Coeff., Unit Hyd., PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT. Lists various parameters.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 71.0 Ia = Dep. 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 ( 0110) | 1 + 2 = 3 | AREA, QPEAK, TPEAK, R.V. Lists data for ADD HYD.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB | STANDHYD ( 5102) | Area (ha)= 1.70 | Total Imp(%)= 64.00 | Dir. Conn.(%)= 52.00

Table with columns: IMPERVIOUS, PERVIOUS (i). Lists Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

Table with columns: TIME, RAIN, TIME, RAIN, TIME, RAIN, TIME, RAIN. Lists data points for transformed hyetograph.

Table with columns: Max.Eff.Inten., Storage Coeff., Unit Hyd., PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT. Lists various parameters.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 66.0 Ia = Dep. Storage (Above)
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511) | IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Table with columns: Distance, Elevation, Manning. Lists data points for section 553.6.

60.88 81.23 0.1100 /0.0700 Main Channel  
 69.13 79.02 0.0700 Main Channel  
 92.42 79.04 0.0700 Main Channel  
 98.70 80.89 0.0700 /0.1100 Main Channel  
 128.88 81.13 0.1100  
 199.00 81.23 0.1100

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ---->					<-pipe / channel->	
AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)	
INFLOW : ID= 2 ( 5102)	1.70	0.16	3.00	21.90	0.03	0.24
OUTFLOW: ID= 1 ( 0511)	1.70	0.12	3.00	21.89	0.02	0.24

CALIB  
 STANDHYD ( 5112)  
 ID= 1 DT= 5.0 min

Area (ha)= 3.00  
 Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	2.07	0.93
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	141.42	40.00
Mannings n	0.013	0.250

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
1 + 2 = 3				
ID1= 1 ( 0511):	1.70	0.117	3.00	21.89
+ ID2= 2 ( 5112):	3.00	0.307	3.00	24.15
ID = 3 ( 0117):	4.70	0.424	3.00	23.33

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2--> OUT= 1  
 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 484.2) ----->

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900
41.13	82.12	0.0900 /0.0700 Main Channel
46.88	79.71	0.0700 Main Channel
51.41	80.90	0.0700 /0.0900 Main Channel
94.29	80.56	0.0900
175.64	80.72	0.0900
192.09	80.85	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

<---- hydrograph ----> <-pipe / channel->

---- TRANSFORMED HYETOGRAPH ----

TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr	TIME hrs	RAIN mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 20.16  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 3.81 (ii) 20.30 (iii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.25 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 0.29 0.03 0.307 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 34.03 10.52 24.15  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.26 0.60

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 71.0 Ia = Dep. 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 ( 0117)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0117)	4.70	0.42	3.00	23.33	0.59	0.38
OUTFLOW: ID= 1 ( 0512)	4.70	0.23	3.00	23.27	0.47	0.33

CALIB  
 STANDHYD ( 5122)  
 ID= 1 DT= 5.0 min

Area (ha)= 3.90  
 Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	2.65	1.25
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	161.25	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	2.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	2.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	2.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	2.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 19.82  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 4.12 (ii) 20.72 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.24 0.05



IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 4.51 8.38  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 293.26 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 9.23  
 over (min) 5.00 30.00  
 Storage Coeff. (min)= 5.90 (ii) 28.44 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 30.00  
 Unit Hyd. peak (cms)= 0.19 0.04

PEAK FLOW (cms)= 0.48 0.12 0.519 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.42 3.00  
 RUNOFF VOLUME (mm)= 34.03 6.72 13.00  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.85 0.17 0.32

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

252.71 91.66 0.1400  
 274.11 91.86 0.1400

<--- TRAVEL TIME TABLE --->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<--- hydrograph ---> <--- pipe / channel --->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW: ID= 2 ( 0126)	111.60	0.92	3.00	6.88	0.52	0.20
OUTFLOW: ID= 1 ( 0603)	111.60	0.52	4.83	6.88	0.48	0.20

CALIB  
 STANDHYD ( 6032) Area (ha)= 34.60  
 ID= 1 DT= 5.0 min Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 16.26 18.34  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 480.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

ADD HYD ( 0125)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 6021):	43.60	0.247	4.08	5.47
+ ID2= 2 ( 6022):	12.90	0.519	3.00	13.00
-----	-----	-----	-----	-----
ID = 3 ( 0125):	56.50	0.549	3.00	7.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3

	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0124):	55.10	0.372	3.75	6.57
+ ID2= 2 ( 0125):	56.50	0.549	3.00	7.19
-----	-----	-----	-----	-----
ID = 3 ( 0126):	111.60	0.915	3.00	6.88

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (2135.9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400

---- TRANSFORMED HYETOGRAPH ----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 18.66  
 over (min) 10.00 25.00  
 Storage Coeff. (min)= 7.93 (ii) 24.94 (ii)  
 Unit Hyd. Tpeak (min)= 10.00 25.00  
 Unit Hyd. peak (cms)= 0.13 0.05

PEAK FLOW (cms)= 1.56 0.50 1.796 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 38.53 10.31 19.34  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.96 0.26 0.48

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 6102) Area (ha)= 21.10  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.55 10.55  
 Dep. Storage (mm)= 1.50 8.00

Average Slope (%) = 1.00 1.00  
 Length (m) = 375.06 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 17.81  
 over (min) = 5.00 25.00  
 Storage Coeff. (min)= 6.84 (ii) 24.17 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.18 0.05

\*TOTALS\*  
 PEAK FLOW (cms)= 1.15 0.28 1.286 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.33 3.00  
 RUNOFF VOLUME (mm)= 38.53 9.76 19.83  
 TOTAL RAINFALL (mm)= 40.03 40.03 40.03  
 RUNOFF COEFFICIENT = 0.96 0.24 0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. 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 ( 0128) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0603):	111.60	0.522	4.83	6.88
+ ID2= 2 ( 6032):	34.60	1.796	3.00	19.34
-----				
ID = 3 ( 0128):	146.20	1.970	3.00	9.83

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ADD HYD ( 0128) |  
 | 3 + 2 = 1 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	146.20	1.970	3.00	9.83
+ ID2= 2 ( 6102):	21.10	1.286	3.00	19.83
-----				
ID = 1 ( 0128):	167.30	3.256	3.00	11.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | ROUTE CHN( 0604) |  
 | IN= 2----> OUT= 1 |  
 Routing time step (min)'= 5.00

----- DATA FOR SECTION (1414.9) ----->>>

Distance	Elevation	Manning	
0.00	86.75	0.0900	
3.09	87.40	0.0900	
18.33	87.41	0.0900	
35.33	86.99	0.0900	
73.84	86.75	0.0900	
103.33	86.41	0.0900	
120.33	86.11	0.0900	
129.46	86.13	0.0900	
143.37	85.32	0.0900	
154.33	85.02	0.0900	
161.57	85.09	0.0900	
163.05	84.78	0.0900 / 0.0700	Main Channel
166.55	83.78	0.0700	Main Channel
168.05	84.78	0.0700 / 0.1100	Main Channel
172.02	85.29	0.1100	
191.39	86.19	0.1100	
270.18	85.78	0.1100	
296.33	86.36	0.1100	
324.34	86.68	0.1100	
368.56	87.05	0.1100	

----- TRAVEL TIME TABLE ----->>>

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

----- hydrograph ----->>> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW: ID= 2 ( 0128)	167.30	3.26	3.00	11.09	2.10	0.09
OUTFLOW: ID= 1 ( 0604)	167.30	1.18	3.08	11.08	1.63	0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

-----  
 | CALIB |  
 | STANDHYD ( 6042) | Area (ha)= 24.00  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 18.72 5.28  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 400.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN
------	------	------	------	------	------

-----  
 | ADD HYD ( 0130) |  
 | 1 + 2 = 3 |

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0604):	167.30	1.181	3.08	11.08
+ ID2= 2 ( 6042):	24.00	2.697	3.00	27.93
-----				
ID = 3 ( 0130):	191.30	3.728	3.00	13.19

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

ROUTE CHN( 0605)
IN= 2--- OUT= 1
Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->
Distance      Elevation      Manning
0.00          82.95          0.1100
3.78          82.95          0.1100
9.24          82.49          0.1100
50.67         82.10          0.1100
105.12        82.17          0.1100
119.34        81.56          0.1100
150.67        81.66          0.1100
157.23        82.37          0.1100
190.03        82.57          0.1100
223.75        82.27          0.1100
252.32        82.50          0.1100
254.65        81.95          0.1100 / 0.0700 Main Channel
258.15        80.95          0.0700 Main Channel
259.65        81.95          0.0700 / 0.1100 Main Channel
263.15        82.90          0.1100
278.14        82.80          0.1100
282.35        81.68          0.1100
285.02        82.19          0.1100
336.56        82.53          0.1100
404.40        82.68          0.1100
  
```

```

----- TRAVEL TIME TABLE ----->
DEPTH  ELEV  VOLUME  FLOW RATE  VELOCITY  TRAV.TIME
(m)    (m)    (cu.m.) (cms)      (m/s)    (min)
0.08   81.03  .125E+02  0.0        0.11     104.30
0.17   81.12  .499E+02  0.0        0.18     65.70
0.25   81.20  .112E+03  0.0        0.24     50.14
0.33   81.28  .199E+03  0.1        0.29     41.39
0.42   81.37  .312E+03  0.1        0.34     35.67
0.50   81.45  .449E+03  0.2        0.38     31.59
0.58   81.53  .611E+03  0.4        0.42     28.50
0.67   81.62  .117E+04  0.5        0.33     36.11
0.75   81.70  .316E+04  1.1        0.24     49.12
0.83   81.78  .560E+04  2.1        0.27     45.15
0.92   81.87  .827E+04  3.4        0.30     40.03
1.00   81.95  .112E+05  5.2        0.33     35.88
1.10   82.05  .151E+05  8.0        0.38     31.68
1.21   82.16  .207E+05  8.8        0.30     39.37
1.31   82.26  .306E+05  14.0       0.33     36.36
1.41   82.36  .433E+05  20.3       0.34     35.59
1.52   82.47  .606E+05  28.4       0.34     35.57
1.62   82.57  .828E+05  41.0       0.36     33.68
  
```

```

Storage Coeff. (min)= 5.69 (ii) 20.26 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.20 0.05

PEAK FLOW (cms)= 1.14 0.12
TIME TO PEAK (hrs)= 3.00 3.33
RUNOFF VOLUME (mm)= 34.03 12.07
TOTAL RAINFALL (mm)= 40.03 40.03
RUNOFF COEFFICIENT = 0.85 0.30
  
```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 75.0 Ia = Dep. 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 ( 0139)
1 + 2 = 3
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm)
ID1= 1 ( 0605): 191.30 1.529 3.50 13.19
+ ID2= 2 ( 6112): 11.40 1.199 3.00 25.69
-----
ID = 3 ( 0139): 202.70 2.312 3.00 13.89
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

CALIB
STANDHYD ( 6052)
ID= 1 DT= 5.0 min
Area (ha)= 15.90
Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00
  
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.77 4.13
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 325.58 40.00
Mannings n = 0.013 0.250
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.59 | 1.583 3.97 | 3.083 8.73 | 4.58 2.38
0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38
  
```

1.73 82.68 .109E+06 60.1 0.39 30.35

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V.
(ha) (cms) (hrs) (mm) (m) MAX DEPTH MAX VEL
(m/s)
INFLOW : ID= 2 ( 0130) 191.30 3.73 3.00 13.19 0.93 0.30
OUTFLOW: ID= 1 ( 0605) 191.30 1.53 3.50 13.19 0.79 0.25
  
```

```

CALIB
STANDHYD ( 6112)
ID= 1 DT= 5.0 min
Area (ha)= 11.40
Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00
  
```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 8.21 3.19
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 275.68 40.00
Mannings n = 0.013 0.250
  
```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 1.59 | 1.583 3.97 | 3.083 8.73 | 4.58 2.38
0.167 1.59 | 1.667 3.97 | 3.167 8.73 | 4.67 2.38
0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38
0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38
0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38
0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38
0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59
0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59
0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59
0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59
0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59
1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59
1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59
1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59
1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59
1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59
1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59
1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59
  
```

```

Max.Eff.Inten.(mm/hr)= 61.93 27.44
over (min) 5.00 25.00
  
```

```

0.250 1.59 | 1.750 3.97 | 3.250 8.73 | 4.75 3.38
0.333 1.59 | 1.833 3.97 | 3.333 8.73 | 4.83 3.38
0.417 1.59 | 1.917 3.97 | 3.417 8.73 | 4.92 3.38
0.500 1.59 | 2.000 3.97 | 3.500 8.73 | 5.00 3.38
0.583 2.38 | 2.083 4.76 | 3.583 3.97 | 5.08 1.59
0.667 2.38 | 2.167 4.76 | 3.667 3.97 | 5.17 1.59
0.750 2.38 | 2.250 4.76 | 3.750 3.97 | 5.25 1.59
0.833 2.38 | 2.333 4.76 | 3.833 3.97 | 5.33 1.59
0.917 2.38 | 2.417 4.76 | 3.917 3.97 | 5.42 1.59
1.000 2.38 | 2.500 4.76 | 4.000 3.97 | 5.50 1.59
1.083 2.38 | 2.583 23.82 | 4.083 3.18 | 5.58 1.59
1.167 2.38 | 2.667 23.82 | 4.167 3.18 | 5.67 1.59
1.250 2.38 | 2.750 42.88 | 4.250 3.18 | 5.75 1.59
1.333 2.38 | 2.833 42.88 | 4.333 3.18 | 5.83 1.59
1.417 2.38 | 2.917 61.93 | 4.417 3.18 | 5.92 1.59
1.500 2.38 | 3.000 61.93 | 4.500 3.18 | 6.00 1.59
  
```

```

Max.Eff.Inten.(mm/hr)= 61.93 16.60
over (min) 5.00 25.00
Storage Coeff. (min)= 6.28 (ii) 24.10 (ii)
Unit Hyd. Tpeak (min)= 5.00 25.00
Unit Hyd. peak (cms)= 0.19 0.05
  
```

```

PEAK FLOW (cms)= 1.64 0.10 1.688 (iii)
TIME TO PEAK (hrs)= 3.00 3.33 3.00
RUNOFF VOLUME (mm)= 34.03 8.85 25.22
TOTAL RAINFALL (mm)= 40.03 40.03 40.03
RUNOFF COEFFICIENT = 0.85 0.22 0.63
  
```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0139): 202.70 2.312 3.00 13.89
+ ID2= 2 ( 6052): 15.90 1.688 3.00 25.22
-----
ID = 3 ( 0132): 218.60 4.000 3.00 14.72
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 350.0) ----->

Distance	Elevation	Manning	
0.00	81.70	0.1100	
3.84	81.72	0.1100	
5.87	80.72	0.1100	
9.38	81.42	0.1100	
49.64	81.07	0.1100	
80.61	80.72	0.1100	
85.61	81.14	0.1100	
93.32	80.00	0.1100	
95.04	80.45	0.1100	
102.72	80.66	0.1100	
110.13	78.93	0.1100 / 0.0700	Main Channel
118.05	78.63	0.0700	Main Channel
124.40	78.89	0.0700 / 0.1100	Main Channel
132.18	79.61	0.1100	
139.34	79.23	0.1100	
144.67	79.43	0.1100	
149.63	79.98	0.1100	
153.42	79.79	0.1100	
158.56	80.58	0.1100	
176.89	81.15	0.1100	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	78.76	.190E+03	0.1	0.19	38.41
0.26	78.89	.758E+03	0.5	0.31	24.20
0.43	79.05	.189E+04	2.1	0.50	14.77
0.59	79.22	.321E+04	4.7	0.65	11.35
0.76	79.39	.498E+04	8.2	0.73	10.10
0.93	79.55	.743E+04	13.1	0.78	9.48
1.09	79.72	.103E+05	19.5	0.84	8.84
1.26	79.89	.135E+05	27.1	0.89	8.29
1.43	80.05	.171E+05	36.3	0.94	7.85
1.59	80.22	.209E+05	47.2	1.00	7.39
1.76	80.39	.251E+05	59.8	1.06	6.99
1.93	80.56	.296E+05	73.5	1.10	6.70
2.10	80.72	.348E+05	87.6	1.12	6.61
2.26	80.89	.412E+05	102.8	1.11	6.68
2.43	81.06	.495E+05	122.0	1.09	6.77
2.60	81.22	.596E+05	146.2	1.09	6.80
2.76	81.39	.714E+05	176.9	1.10	6.72
2.93	81.56	.841E+05	215.0	1.13	6.52
3.10	81.72	.970E+05	256.7	1.18	6.30

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0132)	218.60	4.00	3.00	14.72	0.55	0.60
OUTFLOW: ID= 1 ( 0530)	218.60	2.98	3.08	14.71	0.48	0.54

CALIB  
 STANDHYD ( 5302)  
 ID= 1 DT= 5.0 min  
 Area (ha)= 5.80  
 Total Imp(%)= 66.00  
 Dir. Conn.(%)= 56.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	3.83	1.97
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	196.64	40.00
Mannings n	0.013	0.250

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	1.59	1.583	3.97	3.083	8.73	4.58	2.38
0.167	1.59	1.667	3.97	3.167	8.73	4.67	2.38
0.250	1.59	1.750	3.97	3.250	8.73	4.75	3.38
0.333	1.59	1.833	3.97	3.333	8.73	4.83	3.38
0.417	1.59	1.917	3.97	3.417	8.73	4.92	3.38
0.500	1.59	2.000	3.97	3.500	8.73	5.00	3.38
0.583	2.38	2.083	4.76	3.583	3.97	5.08	1.59
0.667	2.38	2.167	4.76	3.667	3.97	5.17	1.59
0.750	2.38	2.250	4.76	3.750	3.97	5.25	1.59
0.833	2.38	2.333	4.76	3.833	3.97	5.33	1.59
0.917	2.38	2.417	4.76	3.917	3.97	5.42	1.59
1.000	2.38	2.500	4.76	4.000	3.97	5.50	1.59
1.083	2.38	2.583	23.82	4.083	3.18	5.58	1.59
1.167	2.38	2.667	23.82	4.167	3.18	5.67	1.59
1.250	2.38	2.750	42.88	4.250	3.18	5.75	1.59
1.333	2.38	2.833	42.88	4.333	3.18	5.83	1.59
1.417	2.38	2.917	61.93	4.417	3.18	5.92	1.59
1.500	2.38	3.000	61.93	4.500	3.18	6.00	1.59

Max.Eff.Inten.(mm/hr)= 61.93 15.25  
 over (min)= 5.00 25.00  
 Storage Coeff. (min)= 4.64 (ii) 23.08 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 25.00  
 Unit Hyd. peak (cms)= 0.22 0.05

\*TOTALS\*

PEAK FLOW (cms)=	0.54	0.05	0.558 (iii)
TIME TO PEAK (hrs)=	3.00	3.33	3.00
RUNOFF VOLUME (mm)=	34.03	8.49	22.79
TOTAL RAINFALL (mm)=	40.03	40.03	40.03
RUNOFF COEFFICIENT =	0.85	0.21	0.57

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 66.0 Ia = Dep. 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 ( 0134)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0530):	218.60	2.978	3.08	14.71
+ ID2= 2 ( 5302):	5.80	0.558	3.00	22.79
ID = 3 ( 0134):	224.40	3.244	3.08	14.92

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0120):	273.80	6.878	3.00	16.25
+ ID2= 2 ( 0134):	224.40	3.244	3.08	14.92
ID = 3 ( 0135):	498.20	10.110	3.00	15.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
 IN= 2----> OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning
0.00	79.36	0.0900
7.45	79.32	0.0900
13.77	79.27	0.0900
20.24	79.24	0.0900

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0135)	498.20	10.11	3.00	15.65	1.62	0.77
OUTFLOW: ID= 1 ( 0507)	498.20	7.86	3.42	15.65	1.47	0.72













(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
STANDHYD ( 5012) Area (ha)= 39.40  
ID= 1 DT= 5.0 min Total Imp(%)= 38.00 Dir. Conn.(%)= 24.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 14.97 24.43  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 512.51 40.00  
Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 90.00  
over (min) 5.00 15.00  
Storage Coeff. (min)= 5.90 (ii) 14.96 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.19 0.08

\*TOTALS\*  
PEAK FLOW (cms)= 3.51 3.29 6.214 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 37.01 48.74  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90

RUNOFF COEFFICIENT = 0.93 0.40 0.53

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. 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 ( 0100)  
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 5011):	80.20	3.123	3.83	31.90
+ ID2= 2 ( 5012):	39.40	6.214	3.00	48.74
=====				
ID = 3 ( 0100):	119.60	6.950	3.00	37.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0502)  
IN= 2----> OUT= 1 Routing time step (min)'= 5.00

DATA FOR SECTION (1537.5)

Distance	Elevation	Manning
0.00	89.30	0.1100
4.20	89.28	0.1100
9.03	88.80	0.1100
21.55	88.78	0.1100
29.06	88.24	0.1100
39.87	87.83	0.1100
55.54	87.84	0.1100 / 0.0700
57.54	86.84	0.0700
59.04	86.84	0.0700
61.04	87.84	0.0700 / 0.1100
74.10	87.86	0.1100
87.72	88.07	0.1100
101.34	88.18	0.1100
113.53	88.23	0.1100
128.57	88.32	0.1100
142.19	88.61	0.1100
155.81	88.53	0.1100
183.05	88.85	0.1100
187.19	88.84	0.1100
211.21	88.88	0.1100

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.10	86.94	.202E+03	0.0	0.25	78.80
0.20	87.04	.452E+03	0.1	0.37	52.91
0.30	87.14	.749E+03	0.3	0.47	42.34
0.40	87.24	.109E+04	0.5	0.55	36.26
0.50	87.34	.149E+04	0.8	0.62	32.18
0.60	87.44	.193E+04	1.1	0.68	29.19
0.70	87.54	.241E+04	1.5	0.74	26.87
0.80	87.64	.295E+04	2.0	0.79	25.01
0.90	87.74	.353E+04	2.5	0.84	23.46
1.00	87.84	.421E+04	3.1	0.89	22.39
1.10	87.94	.489E+04	4.5	0.63	31.56
1.21	88.05	.150E+05	7.1	0.56	35.43
1.33	88.17	.233E+05	10.6	0.54	36.49
1.44	88.28	.346E+05	15.5	0.53	37.18
1.56	88.40	.484E+05	22.8	0.56	35.35
1.67	88.51	.634E+05	32.1	0.60	32.90
1.79	88.63	.807E+05	41.2	0.61	32.65
1.90	88.74	.101E+06	54.6	0.64	30.77
2.02	88.86	.124E+06	64.7	0.62	31.85

hydrograph <-pipe / channel->  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0100) 119.60 6.95 3.00 37.45 1.21 0.56  
OUTFLOW: ID= 1 ( 0502) 119.60 4.38 4.00 37.44 1.09 0.65

CALIB  
STANDHYD ( 5022) Area (ha)= 51.10  
ID= 1 DT= 5.0 min Total Imp(%)= 48.00 Dir. Conn.(%)= 34.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 24.53 26.57  
Dep. Storage (mm)= 1.50 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 583.67 40.00  
Mannings n = 0.013 0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0102)  
1 + 2 = 3

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0502):	119.60	4.377	4.00	37.44
+ ID2= 2 ( 5022):	51.10	8.668	3.00	53.96
=====				
ID = 3 ( 0102):	170.70	11.143	3.00	42.39

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 88.42  
over (min) 5.00 20.00  
Storage Coeff. (min)= 6.37 (ii) 15.50 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.18 0.07

\*TOTALS\*  
PEAK FLOW (cms)= 6.36 3.31 8.668 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 90.40 35.18 53.96  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.98 0.38 0.59

ROUTE CHN ( 0503 )  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1157.9) ----->

Distance	Elevation	Manning	
0.00	86.78	0.0900	
25.34	87.17	0.0900	
68.44	87.04	0.0900	
117.13	86.81	0.0900	
125.36	85.21	0.0900 / 0.0700	Main Channel
127.36	84.21	0.0700	Main Channel
128.86	84.21	0.0700	Main Channel
130.86	85.21	0.0700 / 0.0900	Main Channel
131.88	86.36	0.0900	
140.63	86.77	0.0900	
168.26	86.90	0.0900	
169.81	87.10	0.0900	
202.11	87.50	0.0900	
239.06	87.35	0.0900	
270.29	87.83	0.0900	
283.90	87.90	0.0900	
297.51	87.86	0.0900	
324.73	87.89	0.0900	
351.95	87.78	0.0900	
388.59	87.46	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

Unit Hyd. peak (cms)=	0.23	0.12	
PEAK FLOW (cms)=	3.56	0.80	4.361 (iii)
TIME TO PEAK (hrs)=	3.00	3.00	3.00
RUNOFF VOLUME (mm)=	85.90	45.87	72.69
TOTAL RAINFALL (mm)=	91.90	91.90	91.90
RUNOFF COEFFICIENT =	0.93	0.50	0.79

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 0503):	170.70	10.123	3.08	42.39
+ ID2= 2 ( 5032):	13.80	4.361	3.00	72.69
ID = 3 ( 0104):	184.50	13.853	3.00	44.65

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN ( 0504 )  
 IN= 2---> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 815.4 ) ----->

Distance	Elevation	Manning	
19.10	82.03	0.0900	
29.01	83.14	0.0900	
40.83	82.56	0.0900	
81.51	82.27	0.0900	
122.18	82.68	0.0900	
169.31	82.61	0.0900	
217.10	82.90	0.0900	
229.61	83.66	0.0900 / 0.0700	Main Channel
232.80	81.85	0.0700	Main Channel
243.24	83.87	0.0700	Main Channel
257.77	84.06	0.0900	
312.01	83.52	0.0900	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900	

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0102)	170.70	11.14	3.00	42.39	1.68	1.29
OUTFLOW: ID= 1 ( 0503)	170.70	10.12	3.08	42.39	1.61	1.26

CALIB	Area (ha)=	13.80
STANDHYD ( 5032)	Total Imp(%)=	76.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	67.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	10.49	3.31
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	303.32	40.00
Mannings n	0.013	0.250

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	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	124.37
over (min)=	5.00	10.00
Storage Coeff. (min)=	4.30 (ii)	9.29 (ii)
Unit Hyd. Tpeak (min)=	5.00	10.00

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90
1.95	83.80	.924E+05	324.9	0.92	4.74
2.08	83.93	.113E+06	411.3	0.95	4.59
2.21	84.06	.135E+06	515.5	1.00	4.37

<---- hydrograph ----> <-pipe / channel->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0104)	184.50	13.85	3.00	44.65	0.89	0.38
OUTFLOW: ID= 1 ( 0504)	184.50	10.53	3.17	44.65	0.84	0.35

CALIB	Area (ha)=	7.70
STANDHYD ( 5042)	Total Imp(%)=	75.00
ID= 1 DT= 5.0 min	Dir. Conn.(%)=	65.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	5.77	1.92
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	226.57	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 119.56  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 3.61 (ii) 11.70 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.25 0.09

\*TOTALS\*  
 PEAK FLOW (cms)= 1.95 0.39 2.281 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 43.30 70.99  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.47 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106) | AREA QPEAK TPEAK R.V.  
 | 1 + 2 = 3 |

\*TOTALS\*  
 PEAK FLOW (cms)= 3.97 0.93 4.774 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 85.90 52.18 74.43  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.57 0.81

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5202) | Area (ha)= 29.70  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	14.85	14.85	Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00	Length (m)=	444.97	40.00
Mannings n =	0.013	0.250			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68

	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0504):	184.50	10.534	3.17	44.65
+ ID2= 2 ( 5042):	7.70	2.281	3.00	70.99
-----				
ID = 3 ( 0106):	192.20	11.293	3.17	45.71

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB | STANDHYD ( 5212) | Area (ha)= 15.70  
 | ID= 1 DT= 5.0 min | Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

IMPERVIOUS			PERVIOUS (i)		
Surface Area (ha)=	11.78	3.93	Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00	Length (m)=	323.52	40.00
Mannings n =	0.013	0.250			

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 139.26  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.47 (ii) 12.09 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.23 0.09

1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 116.83  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.42 (ii) 13.58 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 3.90 2.77 6.230 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 90.40 45.46 61.19  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.98 0.49 0.67

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0521) | Routing time step (min)= 5.00  
 | IN= 2----> OUT= 1 |

<----- DATA FOR SECTION ( 815.4 ) ----->

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61



0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

		<--- hydrograph --->	<-pipe / channel->			
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 5202)	29.70	6.23	3.00	61.19	0.44	0.40
OUTFLOW: ID= 1 ( 0521)	29.70	3.32	3.17	61.17	0.37	0.34

ADD HYD ( 0113)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0521):	29.70	3.316	3.17	61.17
+ ID2= 2 ( 5212):	15.70	4.774	3.00	74.43
=====				
ID = 3 ( 0113):	45.40	7.406	3.00	65.76

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0114)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0106):	192.20	11.293	3.17	45.71
+ ID2= 2 ( 0113):	45.40	7.406	3.00	65.76
=====				
ID = 3 ( 0114):	237.60	18.103	3.00	49.54

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0505)  
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 553.6) ----->  
Distance Elevation Manning

0.00	81.24	0.1100
33.01	80.98	0.1100
49.97	81.27	0.1100
54.18	80.35	0.1100
60.88	81.23	0.1100
69.13	79.02	0.1100
92.42	79.04	0.1100
98.70	80.89	0.1100
128.88	81.13	0.1100
199.00	81.23	0.1100
266.11	81.68	0.1100
306.94	81.73	0.1100
331.74	81.55	0.1100 / 0.0700
336.74	80.15	0.0700
346.34	81.64	0.0700 / 0.0900
394.77	81.68	0.0900
431.64	81.44	0.0900
477.44	82.08	0.0900
481.25	82.81	0.0900
501.51	83.16	0.0900

TRAVEL TIME TABLE

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41
0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

		<--- hydrograph --->	<-pipe / channel->			
AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0114)	237.60	18.10	3.00	49.54	1.04	0.65
OUTFLOW: ID= 1 ( 0505)	237.60	17.34	3.08	49.54	1.01	0.64

RUNOFF COEFFICIENT = 0.93 0.46 0.77

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 5052)  
ID= 1 DT= 5.0 min

Area (ha)=	15.90	
Total Imp(%)=	74.00	
Dir. Conn.(%)=	65.00	
IMPERVIOUS		
Surface Area (ha)=	11.77	4.13
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	325.58	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)=	143.36	112.47
over (min)	5.00	15.00
Storage Coeff. (min)=	4.49 (ii)	12.78 (ii)
Unit Hyd. Tpeak (min)=	5.00	15.00
Unit Hyd. peak (cms)=	0.23	0.08

PEAK FLOW (cms)=	3.96	0.76	4.597 (iii)
TIME TO PEAK (hrs)=	3.00	3.08	3.00
RUNOFF VOLUME (mm)=	85.90	42.28	70.63
TOTAL RAINFALL (mm)=	91.90	91.90	91.90

ADD HYD ( 0108)  
1 + 2 = 3

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0505):	237.60	17.337	3.08	49.54
+ ID2= 2 ( 5052):	15.90	4.597	3.00	70.63
=====				
ID = 3 ( 0108):	253.50	20.289	3.00	50.86

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0506)  
IN= 2---> OUT= 1

Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

TRAVEL TIME TABLE

Table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Rows show depth from 0.11 to 2.27 meters.

hydrograph <-pipe / channel-> table with columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s). Includes INFLOW and OUTFLOW data.

CALIB STANDHYD ( 5062) Area (ha)= 11.70 Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

Table with columns: IMPERVIOUS, PERVIOUS (i). Rows include Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

Table with columns: TIME (hrs), RAIN (mm/hr). Shows transformed rainfall data.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB STANDHYD ( 5102) Area (ha)= 1.70 Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

Table with columns: IMPERVIOUS, PERVIOUS (i). Rows include Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

TRANSFORMED HYETOGRAPH

Table with columns: TIME (hrs), RAIN (mm/hr). Shows transformed rainfall data.

Summary table for CALIB 5102 including Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, Unit Hyd. peak, PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT.

Summary table for CALIB 5062 including Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, Unit Hyd. peak, PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT.

Summary table for CALIB 5062 including Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, Unit Hyd. peak.

Summary table for CALIB 5062 including PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, TOTAL RAINFALL, RUNOFF COEFFICIENT.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0110) table with columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm). Rows show ID1, ID2, and ID3 data.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ROUTE CHN( 0511) Routing time step (min)'= 5.00

DATA FOR SECTION ( 553.6)

Table with columns: Distance, Elevation, Manning. Rows show distance from 0.00 to 199.00.

TRAVEL TIME TABLE

Table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Rows show depth from 0.12 to 2.25 meters.

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 5102) 1.70 0.45 3.00 63.91 0.09 0.24
OUTFLOW: ID= 1 ( 0511) 1.70 0.32 3.00 63.89 0.06 0.24

```

```

Unit Hyd. peak (cms)= 0.29 0.09
PEAK FLOW (cms)= 0.69 0.20 *TOTALS*
TIME TO PEAK (hrs)= 3.00 3.08 0.856 (iii)
RUNOFF VOLUME (mm)= 85.90 45.49 68.93
TOTAL RAINFALL (mm)= 91.90 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.49 0.75

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0511): 1.70 0.322 3.00 63.89
+ ID2= 2 ( 5112): 3.00 0.856 3.00 68.93
=====
ID = 3 ( 0117): 4.70 1.179 3.00 67.11

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0512) |
| IN= 2--> OUT= 1 | Routing time step (min)'= 5.00

```

```

<----- DATA FOR SECTION ( 484.2) ----->
Distance Elevation Manning
0.00 80.80 0.0900
9.73 80.46 0.0900
14.10 82.04 0.0900
17.18 82.28 0.0900
41.13 82.12 0.0900 / 0.0700 Main Channel
46.88 79.71 0.0700 Main Channel
51.41 80.90 0.0700 / 0.0900 Main Channel
94.29 80.56 0.0900
175.64 80.72 0.0900
192.09 80.85 0.0900

```

```

<----- TRAVEL TIME TABLE ----->
DEPTH ELEV VOLUME FLOW RATE VELOCITY TRAV.TIME
(m) (m) (cu.m.) (cms) (m/s) (min)
0.13 79.84 .255E+02 0.0 0.14 54.71

```

```

| CALIB |
| STANDHYD ( 5112) | Area (ha)= 3.00
| ID= 1 DT= 5.0 min | Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.07 0.93
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 141.42 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.68 1.583 9.19 3.083 20.22 4.58 5.51
0.167 3.68 1.667 9.19 3.167 20.22 4.67 5.51
0.250 3.68 1.750 9.19 3.250 20.22 4.75 5.51
0.333 3.68 1.833 9.19 3.333 20.22 4.83 5.51
0.417 3.68 1.917 9.19 3.417 20.22 4.92 5.51
0.500 3.68 2.000 9.19 3.500 20.22 5.00 5.51
0.583 5.51 2.083 11.03 3.583 9.19 5.08 3.68
0.667 5.51 2.167 11.03 3.667 9.19 5.17 3.68
0.750 5.51 2.250 11.03 3.750 9.19 5.25 3.68
0.833 5.51 2.333 11.03 3.833 9.19 5.33 3.68
0.917 5.51 2.417 11.03 3.917 9.19 5.42 3.68
1.000 5.51 2.500 11.03 4.000 9.19 5.50 3.68
1.083 5.51 2.583 55.14 4.083 7.35 5.58 3.68
1.167 5.51 2.667 55.14 4.167 7.35 5.67 3.68
1.250 5.51 2.750 99.25 4.250 7.35 5.75 3.68
1.333 5.51 2.833 99.25 4.333 7.35 5.83 3.68
1.417 5.51 2.917 143.36 4.417 7.35 5.92 3.68
1.500 5.51 3.000 143.36 4.500 7.35 6.00 3.68

```

```

Max.Eff.Inten.(mm/hr)= 143.36 121.62
over (min) 5.00 15.00
Storage Coeff. (min)= 2.72 (ii) 10.76 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00

```

```

0.26 79.98 .102E+03 0.0 0.23 34.47
0.40 80.11 .229E+03 0.1 0.30 26.30
0.53 80.24 .408E+03 0.3 0.36 21.71
0.66 80.37 .637E+03 0.6 0.42 18.71
0.79 80.51 .934E+03 0.9 0.46 16.84
0.93 80.64 .245E+04 1.6 0.31 24.96
1.06 80.77 .873E+04 4.6 0.25 31.51
1.19 80.90 .179E+05 11.4 0.30 26.08
1.32 81.04 .278E+05 22.6 0.38 20.45
1.46 81.17 .381E+05 37.5 0.46 16.91
1.60 81.31 .484E+05 55.4 0.54 14.57
1.74 81.45 .588E+05 76.0 0.61 12.90
1.87 81.59 .693E+05 99.3 0.67 11.63
2.01 81.72 .798E+05 125.0 0.73 10.64
2.15 81.86 .903E+05 153.1 0.80 9.83
2.29 82.00 .101E+06 183.5 0.85 9.16
2.42 82.14 .112E+06 214.3 0.90 8.68
2.56 82.27 .123E+06 244.4 0.93 8.40

```

```

<--- hydrograph ---> <-pipe / channel->
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL
(ha) (cms) (hrs) (mm) (m) (m/s)
INFLOW : ID= 2 ( 0117) 4.70 1.18 3.00 67.11 0.84 0.40
OUTFLOW: ID= 1 ( 0512) 4.70 0.73 3.00 67.04 0.72 0.44

```

```

| CALIB |
| STANDHYD ( 5122) | Area (ha)= 3.90
| ID= 1 DT= 5.0 min | Total Imp(%)= 68.00 Dir. Conn.(%)= 57.00

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 2.65 1.25
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 161.25 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

---- TRANSFORMED HYETOGRAPH ----
TIME RAIN TIME RAIN TIME RAIN TIME RAIN
hrs mm/hr hrs mm/hr hrs mm/hr hrs mm/hr
0.083 3.68 1.583 9.19 3.083 20.22 4.58 5.51
0.167 3.68 1.667 9.19 3.167 20.22 4.67 5.51
0.250 3.68 1.750 9.19 3.250 20.22 4.75 5.51
0.333 3.68 1.833 9.19 3.333 20.22 4.83 5.51

```

```

0.417 3.68 1.917 9.19 3.417 20.22 4.92 5.51
0.500 3.68 2.000 9.19 3.500 20.22 5.00 5.51
0.583 5.51 2.083 11.03 3.583 9.19 5.08 3.68
0.667 5.51 2.167 11.03 3.667 9.19 5.17 3.68
0.750 5.51 2.250 11.03 3.750 9.19 5.25 3.68
0.833 5.51 2.333 11.03 3.833 9.19 5.33 3.68
0.917 5.51 2.417 11.03 3.917 9.19 5.42 3.68
1.000 5.51 2.500 11.03 4.000 9.19 5.50 3.68
1.083 5.51 2.583 55.14 4.083 7.35 5.58 3.68
1.167 5.51 2.667 55.14 4.167 7.35 5.67 3.68
1.250 5.51 2.750 99.25 4.250 7.35 5.75 3.68
1.333 5.51 2.833 99.25 4.333 7.35 5.83 3.68
1.417 5.51 2.917 143.36 4.417 7.35 5.92 3.68
1.500 5.51 3.000 143.36 4.500 7.35 6.00 3.68

```

```

Max.Eff.Inten.(mm/hr)= 143.36 120.11
over (min) 5.00 15.00
Storage Coeff. (min)= 2.95 (ii) 11.02 (ii)
Unit Hyd. Tpeak (min)= 5.00 15.00
Unit Hyd. peak (cms)= 0.28 0.09

```

```

*TOTALS*
PEAK FLOW (cms)= 0.88 0.26 1.097 (iii)
TIME TO PEAK (hrs)= 3.00 3.08 3.00
RUNOFF VOLUME (mm)= 85.90 45.28 68.43
TOTAL RAINFALL (mm)= 91.90 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.49 0.74

```

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119) |
| 1 + 2 = 3 |
-----
ID1= 1 ( 0512): 4.70 0.726 3.00 67.04
+ ID2= 2 ( 5122): 3.90 1.097 3.00 68.43
=====
ID = 3 ( 0119): 8.60 1.756 3.00 67.67

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)

1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

ID1= 1 ( 0110): 265.20 19.243 3.17 51.80

+ ID2= 2 ( 0119): 8.60 1.756 3.00 67.67

ID = 3 ( 0120): 273.80 20.337 3.17 52.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

NASHYD ( 6011)

Area (ha)= 44.10 Curve Number (CN)= 62.0

ID= 1 DT= 5.0 min

Ia (mm)= 8.00 # of Linear Res. (N)= 3.00

U.H. Tp (hrs)= 0.83

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time for the transformed hyetograph.

Unit Hyd Qpeak (cms)= 2.027

PEAK FLOW (cms)= 1.596 (i)  
TIME TO PEAK (hrs)= 3.833  
RUNOFF VOLUME (mm)= 29.382  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.320

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

\*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20% YOU SHOULD CONSIDER SPLITTING THE AREA.

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES: CN\* = 62.0 Ia = Dep. 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 ( 0124)

1 + 2 = 3

AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)

ID1= 1 ( 6011): 44.10 1.596 3.83 29.38

+ ID2= 2 ( 6012): 11.00 1.451 3.00 41.55

ID = 3 ( 0124): 55.10 1.931 3.50 31.81

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB

NASHYD ( 6021)

Area (ha)= 43.60 Curve Number (CN)= 62.0

ID= 1 DT= 5.0 min

Ia (mm)= 8.00 # of Linear Res. (N)= 3.00

U.H. Tp (hrs)= 0.95

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time for the transformed hyetograph.

CALIB

STANDHYD ( 6012)

Area (ha)= 11.00

ID= 1 DT= 5.0 min

Total Imp(%)= 28.00 Dir. Conn.(%)= 16.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.08 7.92  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 270.80 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time for the transformed hyetograph.

Max. Eff. Inten. (mm/hr)= 143.36 76.68  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 4.02 (ii) 13.68 (ii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.24 0.08

PEAK FLOW (cms)= 0.68 0.94  
TIME TO PEAK (hrs)= 3.00 3.08  
RUNOFF VOLUME (mm)= 85.90 33.10  
TOTAL RAINFALL (mm)= 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.36

\*TOTALS\*

1.451 (iii)  
3.00  
41.55  
91.90  
0.45

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time for the transformed hyetograph.

Unit Hyd Qpeak (cms)= 1.753

PEAK FLOW (cms)= 1.426 (i)  
TIME TO PEAK (hrs)= 4.000  
RUNOFF VOLUME (mm)= 29.382  
TOTAL RAINFALL (mm)= 91.900  
RUNOFF COEFFICIENT = 0.320

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB

STANDHYD ( 6022)

Area (ha)= 12.90

ID= 1 DT= 5.0 min

Total Imp(%)= 35.00 Dir. Conn.(%)= 23.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 4.51 8.38  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 293.26 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Rows show rainfall intensity over time for the transformed hyetograph.

1.417 5.51 | 2.917 143.36 | 4.417 7.35 | 5.92 3.68  
 1.500 5.51 | 3.000 143.36 | 4.500 7.35 | 6.00 3.68

Max.Eff.Inten.(mm/hr)= 143.36 78.70  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.22 (ii) 13.78 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.24 0.08  
 PEAK FLOW (cms)= 1.14 1.02 \*TOTALS\*  
 TIME TO PEAK (hrs)= 3.00 3.08  
 RUNOFF VOLUME (mm)= 85.90 33.48 45.53  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.36 0.50

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3  
 ID1= 1 ( 0021): 43.60 1.426 4.00 29.38  
 + ID2= 2 ( 0022): 12.90 1.979 3.00 45.53  
 ID = 3 ( 0125): 56.50 2.259 3.00 33.07

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0126)  
 1 + 2 = 3  
 ID1= 1 ( 0124): 55.10 1.931 3.50 31.81  
 + ID2= 2 ( 0125): 56.50 2.259 3.00 33.07  
 ID = 3 ( 0126): 111.60 4.090 3.00 32.45

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0603)

INFLOW : ID= 2 ( 0126) (ha) (cms) (hrs) (mm) (m) (m/s)  
 111.60 4.09 3.00 32.45 0.69 0.24  
 OUTFLOW : ID= 1 ( 0603) 111.60 2.68 4.50 32.44 0.62 0.22

CALIB  
 STANDHYD ( 6032) Area (ha)= 34.60  
 ID= 1 DT= 5.0 min Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 16.26 18.34  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 480.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 114.52  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 5.67 (ii) 13.90 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.20 0.08  
 \*TOTALS\*

| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (2135,9) ----->

Distance	Elevation	Manning
0.00	92.58	0.1400
8.54	92.59	0.1400
22.11	92.47	0.1400
48.74	91.83	0.1400
67.59	91.58	0.1400
86.45	91.21	0.1400
103.50	90.80	0.1400
118.09	90.23	0.1400
127.84	90.09	0.1400 / 0.0700
129.84	89.59	0.0700
130.34	90.09	0.0700 / 0.1400
140.57	90.14	0.1400
161.87	90.11	0.1400
177.03	90.04	0.1400
188.67	89.87	0.1400
199.59	90.31	0.1400
212.02	90.96	0.1400
225.58	91.35	0.1400
252.71	91.66	0.1400
274.11	91.86	0.1400

----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV. TIME (min)
0.12	89.71	.358E+02	0.0	0.19	81.29
0.25	89.84	.143E+03	0.0	0.30	51.21
0.37	89.96	.689E+03	0.2	0.23	67.44
0.50	90.09	.278E+04	0.6	0.20	77.83
0.67	90.26	.132E+05	3.4	0.23	65.31
0.83	90.42	.262E+05	9.3	0.33	46.76
1.00	90.59	.403E+05	17.9	0.41	37.64
1.17	90.76	.556E+05	28.8	0.48	32.17
1.33	90.92	.721E+05	42.0	0.53	28.63
1.50	91.09	.903E+05	57.1	0.58	26.37
1.67	91.26	.110E+06	74.7	0.62	24.65
1.83	91.42	.133E+06	93.4	0.64	23.71
2.00	91.59	.159E+06	113.6	0.66	23.26
2.17	91.76	.188E+06	136.6	0.67	22.96
2.33	91.92	.222E+06	168.5	0.70	21.97
2.50	92.09	.258E+06	211.3	0.75	20.33
2.67	92.26	.294E+06	258.5	0.81	18.98
2.83	92.42	.332E+06	310.1	0.86	17.85
3.00	92.59	.371E+06	358.0	0.88	17.29

<--- hydrograph ---> <-pipe / channel->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

PEAK FLOW (cms)= 4.13 3.31 6.910 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 90.40 45.12 59.61  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.98 0.49 0.65

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. 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 ( 6102) Area (ha)= 21.10  
 ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 10.55 10.55  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 375.06 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 111.58  
 over (min) 5.00 15.00  
 Storage Coeff. (min)= 4.89 (ii) 13.21 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 15.00  
 Unit Hyd. peak (cms)= 0.22 0.08

\*TOTALS\*  
 PEAK FLOW (cms)= 2.81 1.89 4.394 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.08 3.00  
 RUNOFF VOLUME (mm)= 90.40 43.38 59.84  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.98 0.47 0.65

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 70.0 Ia = Dep. 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 ( 0128)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0603):	111.60	2.684	4.50	32.44
+ ID2= 2 ( 6032):	34.60	6.910	3.00	59.61
ID = 3 ( 0128):	146.20	7.642	3.00	38.87

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0128)  
 3 + 2 = 1

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 3 ( 0128):	146.20	7.642	3.00	38.87
+ ID2= 2 ( 6102):	21.10	4.394	3.00	59.84
ID = 1 ( 0128):	167.30	12.036	3.00	41.52

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0604)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

OUTFLOW: ID= 1 ( 0604) 167.30 4.08 3.08 41.50 2.23 0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

CALIB  
 STANDHYD ( 6042)  
 ID= 1 DT= 5.0 min

Area (ha)= 24.00  
 Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	18.72	5.28
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	400.00	40.00
Mannings n =	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 152.35  
 over (min) 5.00 10.00  
 Storage Coeff. (min)= 5.08 (ii) 9.84 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 10.00  
 Unit Hyd. peak (cms)= 0.21 0.11

\*TOTALS\*  
 PEAK FLOW (cms)= 6.27 1.57 7.836 (iii)

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11
0.67	84.45	.743E+03	0.1	0.06	171.79
0.83	84.61	.116E+04	0.1	0.08	148.04
1.00	84.78	.167E+04	0.2	0.09	131.10
1.20	84.98	.252E+04	0.4	0.10	110.62
1.41	85.19	.469E+04	0.6	0.09	121.59
1.61	85.39	.842E+04	1.1	0.09	126.63
1.81	85.59	.133E+05	1.8	0.09	121.99
2.01	85.79	.192E+05	2.7	0.10	116.68
2.22	86.00	.298E+05	4.0	0.09	125.45
2.42	86.20	.487E+05	5.6	0.08	143.80
2.62	86.40	.736E+05	9.0	0.08	137.02
2.82	86.60	.102E+06	13.1	0.09	130.82
3.03	86.81	.136E+06	18.1	0.09	125.42
3.23	87.01	.178E+06	24.4	0.09	121.07
3.43	87.21	.224E+06	34.2	0.10	108.80
3.63	87.41	.271E+06	44.8	0.11	100.89

<---- hydrograph ----> <-pipe / channel-->

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
INFLOW : ID= 2 ( 0128)	167.30	12.04	3.00	41.52	2.77	0.08

TIME TO PEAK (hrs)= 3.00 3.00 3.00  
 RUNOFF VOLUME (mm)= 85.90 55.42 76.45  
 TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
 RUNOFF COEFFICIENT = 0.93 0.60 0.83

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 79.0 Ia = Dep. 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 ( 0130)  
 1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0604):	167.30	4.076	3.08	41.50
+ ID2= 2 ( 6042):	24.00	7.836	3.00	76.45
ID = 3 ( 0130):	191.30	11.574	3.00	45.89

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0605)  
 IN= 2----> OUT= 1 Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100

404.40 82.68 0.1100

TRAVEL TIME TABLE

Table with columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Rows range from 0.08 to 1.73 depth.

Summary table with columns: AREA (ha), QPEAK (cms), TPEAK (hrs), R.V. (mm), MAX DEPTH (m), MAX VEL (m/s). Includes INFLOW and OUTFLOW data.

Summary table for CALIB STANDHYD (6112) with columns: Area (ha), Total Imp(%), IMPERVIOUS, PERVIOUS (i), Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

ID = 3 ( 0139): 202.70 7.302 3.00 47.36

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

Summary table for CALIB STANDHYD (6052) with columns: Area (ha), Total Imp(%), IMPERVIOUS, PERVIOUS (i), Surface Area, Dep. Storage, Average Slope, Length, Mannings n.

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Hyetograph table with columns: TIME (hrs), RAIN (mm/hr). Rows range from 0.083 to 1.500 time.

Summary table for ID=3 with columns: Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, Unit Hyd. peak, PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME.

Hyetograph table with columns: TIME (hrs), RAIN (mm/hr). Rows range from 0.083 to 1.500 time.

Summary table for ID=3 with columns: Max.Eff.Inten., Storage Coeff., Unit Hyd. Tpeak, Unit Hyd. peak, PEAK FLOW, TIME TO PEAK, RUNOFF VOLUME, RUNOFF COEFFICIENT.

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

ADD HYD ( 0139)

Summary table for ADD HYD (0139) with columns: AREA, QPEAK, TPEAK, R.V.

TOTAL RAINFALL (mm)= 91.90 91.90 91.90
RUNOFF COEFFICIENT = 0.93 0.44 0.76

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
(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)

Summary table for ADD HYD (0132) with columns: AREA, QPEAK, TPEAK, R.V.

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)

IN= 2---> OUT= 1 Routing time step (min)= 5.00

DATA FOR SECTION ( 350.0 )

Table with columns: Distance, Elevation, Manning. Rows range from 0.00 to 176.89 distance.

TRAVEL TIME TABLE						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.13	78.76	.190E+03	0.1	0.19	38.41	
0.26	78.89	.758E+03	0.5	0.31	24.20	
0.43	79.05	.189E+04	2.1	0.50	14.77	
0.59	79.22	.321E+04	4.7	0.65	11.35	
0.76	79.39	.498E+04	8.2	0.73	10.10	
0.93	79.55	.743E+04	13.1	0.78	9.48	
1.09	79.72	.103E+05	19.5	0.84	8.84	
1.26	79.89	.135E+05	27.1	0.89	8.29	
1.43	80.05	.171E+05	36.3	0.94	7.85	
1.59	80.22	.209E+05	47.2	1.00	7.39	
1.76	80.39	.251E+05	59.8	1.06	6.99	
1.93	80.56	.296E+05	73.5	1.10	6.70	
2.10	80.72	.348E+05	87.6	1.12	6.61	
2.26	80.89	.412E+05	102.8	1.11	6.68	
2.43	81.06	.495E+05	122.0	1.09	6.77	
2.60	81.22	.596E+05	146.2	1.09	6.80	
2.76	81.39	.714E+05	176.9	1.10	6.72	
2.93	81.56	.841E+05	215.0	1.13	6.52	
3.10	81.72	.970E+05	256.7	1.18	6.30	

<---- hydrograph ----> <-pipe / channel-->

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0132)	218.60	11.86	3.00	49.01	0.89	0.77
OUTFLOW: ID= 1 ( 0530)	218.60	9.42	3.08	49.01	0.80	0.74

CALIB  
STANDHYD ( 5302)  
ID= 1 DT= 5.0 min

Area (ha)= 5.80  
Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

	IMPERVIOUS	PERVIOUS (i)
(ha)=		
Surface Area	3.83	1.97
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	196.64	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0120):	273.80	20.337	3.17	52.29
+ ID2= 2 ( 0134):	224.40	10.205	3.00	49.43
ID = 3 ( 0135):	498.20	30.261	3.08	51.00

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0507)  
IN= 2--- OUT= 1 | Routing time step (min)'= 5.00

<----- DATA FOR SECTION ( 40.0) ----->

Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	
60.87	79.24	0.0900	
71.39	79.48	0.0900	
73.53	78.96	0.0900	
76.96	78.07	0.0900	
82.21	77.08	0.0900 / 0.0700	Main Channel
85.82	76.28	0.0700	Main Channel
89.97	76.89	0.0700	Main Channel
91.35	77.38	0.0700 / 0.0900	Main Channel
95.27	78.68	0.0900	
98.44	79.63	0.0900	
102.89	79.89	0.0900	

TRAVEL TIME TABLE						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.16	76.44	.113E+03	0.0	0.14	88.10	
0.32	76.60	.451E+03	0.1	0.23	55.50	
0.49	76.76	.101E+04	0.4	0.30	42.35	
0.65	76.92	.180E+04	0.9	0.37	34.57	
0.81	77.09	.276E+04	1.6	0.44	28.86	

hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68
0.750	5.51	2.250	11.03	3.750	9.19	5.25	3.68
0.833	5.51	2.333	11.03	3.833	9.19	5.33	3.68
0.917	5.51	2.417	11.03	3.917	9.19	5.42	3.68
1.000	5.51	2.500	11.03	4.000	9.19	5.50	3.68
1.083	5.51	2.583	55.14	4.083	7.35	5.58	3.68
1.167	5.51	2.667	55.14	4.167	7.35	5.67	3.68
1.250	5.51	2.750	99.25	4.250	7.35	5.75	3.68
1.333	5.51	2.833	99.25	4.333	7.35	5.83	3.68
1.417	5.51	2.917	143.36	4.417	7.35	5.92	3.68
1.500	5.51	3.000	143.36	4.500	7.35	6.00	3.68

Max.Eff.Inten.(mm/hr)= 143.36 100.77  
over (min)= 5.00 15.00  
Storage Coeff. (min)= 3.32 (ii) 11.98 (iii)  
Unit Hyd. Tpeak (min)= 5.00 15.00  
Unit Hyd. peak (cms)= 0.26 0.09

\*TOTALS\*  
PEAK FLOW (cms)= 1.27 0.33 1.549 (iii)  
TIME TO PEAK (hrs)= 3.00 3.08 3.00  
RUNOFF VOLUME (mm)= 85.90 39.33 65.41  
TOTAL RAINFALL (mm)= 91.90 91.90 91.90  
RUNOFF COEFFICIENT = 0.93 0.43 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)  
(ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
THAN THE STORAGE COEFFICIENT.  
(iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

AREA	QPEAK	TPEAK	R.V.	
(ha)	(cms)	(hrs)	(mm)	
ID1= 1 ( 0530):	218.60	9.415	3.08	49.01
+ ID2= 2 ( 5302):	5.80	1.549	3.00	65.41
ID = 3 ( 0134):	224.40	10.205	3.00	49.43

0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL	
(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)	
INFLOW : ID= 2 ( 0135)	498.20	30.26	3.08	51.00	2.54	1.01
OUTFLOW: ID= 1 ( 0507)	498.20	26.69	3.33	51.00	2.40	0.98

CALIB  
STANDHYD ( 5072)  
ID= 1 DT= 5.0 min

Area (ha)= 48.90  
Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

	IMPERVIOUS	PERVIOUS (i)
(ha)=		
Surface Area	24.45	24.45
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	570.96	40.00
Mannings n	0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	3.68	1.583	9.19	3.083	20.22	4.58	5.51
0.167	3.68	1.667	9.19	3.167	20.22	4.67	5.51
0.250	3.68	1.750	9.19	3.250	20.22	4.75	5.51
0.333	3.68	1.833	9.19	3.333	20.22	4.83	5.51
0.417	3.68	1.917	9.19	3.417	20.22	4.92	5.51
0.500	3.68	2.000	9.19	3.500	20.22	5.00	5.51
0.583	5.51	2.083	11.03	3.583	9.19	5.08	3.68
0.667	5.51	2.167	11.03	3.667	9.19	5.17	3.68







Table with 10 columns of numerical data, ranging from 24.25 to 28.33 in the first column and 0.17 to 0.12 in the second column.

Table with 10 columns of numerical data, ranging from 0.50 to 4.58 in the first column and 0.00 to 0.15 in the second column.

Table with 15 columns of numerical data, ranging from 28.42 to 31.25 in the first column and 0.12 to 0.10 in the second column.

STORE HYD( 160S) AREA (ha)= 30.00
ID= 1 DT= 5.0min QPEAK (cms)= 1.37
TPEAK (hrs)= 71.92
VOLUME (mm)= 625.27

Table with 12 columns of numerical data, including headers TIME, FLOW, and TIME in both hours and cms.

Table with 15 columns of numerical data, ranging from 4.67 to 8.75 in the first column and 0.00 to 0.20 in the second column.





0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 31.75  
over (min) = 5.00 25.00  
Storage Coeff. (min)= 7.16 (ii) 20.91 (ii)  
Unit Hyd. Tpeak (min)= 5.00 25.00  
Unit Hyd. peak (cms)= 0.17 0.05

\*TOTALS\*  
PEAK FLOW (cms)= 2.08 1.06 2.636 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 50.50 15.46 23.87  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.27 0.42

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 65.0 Ia = Dep. 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 ( 0100)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 5011):	80.20	1.208	3.92	12.70
+ ID2= 2 ( 5012):	39.40	2.636	3.00	23.87
=====				
ID = 3 ( 0100):	119.60	2.865	3.00	16.38

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN ( 0502)|

	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0100)	119.60	2.86	3.00	16.38	0.96	0.87
OUTFLOW : ID= 1 ( 0502)	119.60	2.02	3.58	16.37	0.81	0.80

CALIB		
STANDHYD ( 5022)		
ID= 1 DT= 5.0 min		
-----		
	Area (ha)=	51.10
	Total Imp(%)=	48.00
	Dir. Conn.(%)=	34.00
-----		
	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	24.53	26.57
Dep. Storage (mm)=	1.50	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	583.67	40.00
Mannings n	= 0.013	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 30.86  
over (min) = 10.00 25.00  
Storage Coeff. (min)= 7.74 (ii) 21.65 (ii)  
Unit Hyd. Tpeak (min)= 10.00 25.00  
Unit Hyd. peak (cms)= 0.13 0.05

\*TOTALS\*

| IN= 2---- OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (1537.5) -----						
Distance	Elevation	Manning				
0.00	89.30	0.1100				
4.20	89.28	0.1100				
9.03	88.80	0.1100				
21.55	88.78	0.1100				
29.06	88.24	0.1100				
39.87	87.83	0.1100				
55.54	87.84	0.1100 / 0.0700	Main Channel			
57.54	86.84	0.0700	Main Channel			
59.04	86.84	0.0700	Main Channel			
61.04	87.84	0.0700 / 0.1100	Main Channel			
74.10	87.86	0.1100				
87.72	88.07	0.1100				
101.34	88.18	0.1100				
113.53	88.23	0.1100				
128.57	88.32	0.1100				
142.19	88.61	0.1100				
155.81	88.53	0.1100				
183.05	88.85	0.1100				
187.19	88.84	0.1100				
211.21	88.88	0.1100				

----- TRAVEL TIME TABLE -----						
DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME	
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)	
0.10	86.94	.202E+03	0.0	0.25	78.80	
0.20	87.04	.452E+03	0.1	0.37	52.91	
0.30	87.14	.749E+03	0.3	0.47	42.34	
0.40	87.24	.109E+04	0.5	0.55	36.26	
0.50	87.34	.149E+04	0.8	0.62	32.18	
0.60	87.44	.193E+04	1.1	0.68	29.19	
0.70	87.54	.241E+04	1.5	0.74	26.87	
0.80	87.64	.295E+04	2.0	0.79	25.01	
0.90	87.74	.353E+04	2.5	0.84	23.46	
1.00	87.84	.421E+04	3.1	0.89	22.39	
1.10	87.94	.494E+04	4.5	0.93	21.56	
1.21	88.05	.150E+05	7.1	0.96	20.71	
1.33	88.17	.233E+05	10.6	0.98	20.00	
1.44	88.28	.346E+05	15.5	0.99	19.44	
1.56	88.40	.484E+05	22.8	1.00	19.00	
1.67	88.51	.634E+05	32.1	1.00	18.70	
1.79	88.63	.807E+05	41.2	1.00	18.50	
1.90	88.74	.101E+06	54.6	1.00	18.40	
2.02	88.86	.124E+06	64.7	1.00	18.35	

<---- hydrograph ----> <-pipe / channel- >  
AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL

PEAK FLOW (cms)= 3.51 1.10 4.077 (iii)  
TIME TO PEAK (hrs)= 3.00 3.33 3.00  
RUNOFF VOLUME (mm)= 55.00 14.58 28.32  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.97 0.26 0.50

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 62.0 Ia = Dep. 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 ( 0102)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0502):	119.60	2.022	3.58	16.37
+ ID2= 2 ( 5022):	51.10	4.077	3.00	28.32
=====				
ID = 3 ( 0102):	170.70	5.458	3.08	19.95

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN( 0503)|  
| IN= 2---- OUT= 1 | Routing time step (min)'= 5.00

----- DATA FOR SECTION (1157.9) -----						
Distance	Elevation	Manning				
0.00	86.78	0.0900				
25.34	87.17	0.0900				
68.44	87.04	0.0900				
117.13	86.81	0.0900				
125.36	85.21	0.0900 / 0.0700	Main Channel			
127.36	84.21	0.0700	Main Channel			
128.86	84.21	0.0700	Main Channel			
130.86	85.21	0.0700 / 0.0900	Main Channel			
131.88	86.36	0.0900				
140.63	86.77	0.0900				
168.26	86.90	0.0900				
169.81	87.10	0.0900				
202.11	87.50	0.0900				
239.06	87.35	0.0900				
270.29	87.83	0.0900				
283.90	87.90	0.0900				
297.51	87.86	0.0900				
324.73	87.89	0.0900				

351.95 87.78 0.0900  
388.59 87.46 0.0900

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	84.38	.114E+03	0.1	0.34	18.34
0.33	84.54	.269E+03	0.4	0.50	12.51
0.50	84.71	.465E+03	0.8	0.62	10.07
0.67	84.88	.703E+03	1.4	0.72	8.63
0.83	85.04	.982E+03	2.1	0.81	7.65
1.00	85.21	.130E+04	3.1	0.89	6.93
1.21	85.42	.177E+04	5.0	1.06	5.87
1.41	85.62	.234E+04	7.4	1.17	5.28
1.62	85.83	.300E+04	10.2	1.27	4.89
1.83	86.04	.376E+04	13.6	1.35	4.60
2.03	86.24	.462E+04	17.6	1.42	4.37
2.24	86.45	.560E+04	22.1	1.47	4.22
2.45	86.66	.695E+04	27.6	1.48	4.20
2.66	86.87	.925E+04	31.2	1.25	4.94
2.86	87.07	.168E+05	43.1	0.96	6.48
3.07	87.28	.297E+05	67.7	0.85	7.30
3.28	87.49	.456E+05	103.1	0.84	7.38
3.48	87.69	.663E+05	159.6	0.89	6.93
3.69	87.90	.907E+05	223.4	0.92	6.77

hydrograph

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
170.70	5.46	3.08	19.95	1.24	1.08
170.70	5.07	3.08	19.95	1.21	1.06

CALIB  
STANDHYD ( 5032)  
ID= 1 DT= 5.0 min

Area (ha)= 13.80  
Total Imp(%)= 76.00  
Dir. Conn.(%)= 67.00

IMPERVIOUS (ha)	PERVIOUS (i)
10.49	3.31
6.00	8.00
1.00	1.00
303.32	40.00
0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 47.47  
over (min) = 5.00  
Storage Coeff. (min)= 5.23 (ii) 16.94 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.21 0.06

\*TOTALS\*

PEAK FLOW (cms)	TIME TO PEAK (hrs)	RUNOFF VOLUME (mm)	TOTAL RAINFALL (mm)	RUNOFF COEFFICIENT
2.14	3.00	50.50	56.50	0.89
0.25	3.17	20.36	56.50	0.36
2.311	3.00	40.55	56.50	0.72

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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)

ID	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0503)	170.70	5.070	3.08	19.95
+ ID2= 2 ( 5032)	13.80	2.311	3.00	40.55

ID = 3 ( 0104): 184.50 6.425 3.00 21.49

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0504)

Routing time step (min)= 5.00

DATA FOR SECTION ( 815.4)

Distance	Elevation	Manning
19.10	82.03	0.0900
29.01	83.14	0.0900
40.83	82.56	0.0900
81.51	82.27	0.0900
122.18	82.68	0.0900
169.31	82.61	0.0900
217.10	82.90	0.0900
229.61	83.66	0.0900 / 0.0700
232.80	81.85	0.0700
243.24	83.87	0.0700
257.77	84.06	0.0900
312.01	83.52	0.0900
415.18	83.86	0.0900
461.15	83.40	0.0900
501.83	83.53	0.0900
513.93	82.96	0.0900
526.85	83.23	0.0900
569.63	83.21	0.0900
610.76	83.63	0.0900
663.54	83.88	0.0900

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	81.96	.117E+02	0.0	0.18	23.95
0.23	82.08	.492E+02	0.1	0.28	15.67
0.34	82.19	.135E+03	0.2	0.34	13.00
0.45	82.30	.312E+03	0.4	0.32	13.44
0.57	82.42	.116E+04	1.2	0.28	15.74
0.68	82.53	.287E+04	3.5	0.32	13.85
0.79	82.64	.549E+04	7.0	0.33	13.13
0.91	82.76	.101E+05	14.9	0.39	11.28
1.02	82.87	.155E+05	27.5	0.47	9.38
1.13	82.98	.214E+05	45.2	0.55	7.89
1.25	83.10	.277E+05	67.2	0.64	6.87
1.36	83.21	.344E+05	93.6	0.71	6.12
1.47	83.32	.426E+05	125.3	0.77	5.67
1.59	83.44	.516E+05	162.2	0.82	5.30
1.70	83.55	.620E+05	204.2	0.86	5.06
1.81	83.66	.747E+05	254.0	0.89	4.90

hydrograph

AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
184.50	6.43	3.00	21.49	0.78	0.33
184.50	5.13	3.25	21.49	0.73	0.32

CALIB  
STANDHYD ( 5042)  
ID= 1 DT= 5.0 min

Area (ha)= 7.70  
Total Imp(%)= 75.00  
Dir. Conn.(%)= 65.00

IMPERVIOUS (ha)	PERVIOUS (i)
5.77	1.92
6.00	8.00
1.00	1.00
226.57	40.00
0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 44.72  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.39 (ii) 16.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.23 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 1.18 0.14 1.275 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 18.94 39.45  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.34 0.70

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 68.0 Ia = Dep. 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 ( 0106) |  
1 + 2 = 3
 ID1= 1 ( 0504): 184.50 5.126 3.25 21.49  
 + ID2= 2 ( 5042): 7.70 1.275 3.00 39.45  
 =====  
 ID = 3 ( 0106): 192.20 5.468 3.25 22.21

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
 | CALIB |  
 | STANDHYD ( 5212) |  
ID= 1 DT= 5.0 min
 Area (ha)= 15.70  
 Total Imp(%)= 75.00 Dir. Conn.(%)= 66.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 11.78 3.93  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 323.52 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr  
 0.083 2.26 | 1.583 5.65 | 3.083 12.43 | 4.58 3.39  
 0.167 2.26 | 1.667 5.65 | 3.167 12.43 | 4.67 3.39  
 0.250 2.26 | 1.750 5.65 | 3.250 12.43 | 4.75 3.39  
 0.333 2.26 | 1.833 5.65 | 3.333 12.43 | 4.83 3.39  
 0.417 2.26 | 1.917 5.65 | 3.417 12.43 | 4.92 3.39  
 0.500 2.26 | 2.000 5.65 | 3.500 12.43 | 5.00 3.39  
 0.583 3.39 | 2.083 6.78 | 3.583 5.65 | 5.08 2.26  
 0.667 3.39 | 2.167 6.78 | 3.667 5.65 | 5.17 2.26  
 0.750 3.39 | 2.250 6.78 | 3.750 5.65 | 5.25 2.26  
 0.833 3.39 | 2.333 6.78 | 3.833 5.65 | 5.33 2.26  
 0.917 3.39 | 2.417 6.78 | 3.917 5.65 | 5.42 2.26  
 1.000 3.39 | 2.500 6.78 | 4.000 5.65 | 5.50 2.26  
 1.083 3.39 | 2.583 33.90 | 4.083 4.52 | 5.58 2.26  
 1.167 3.39 | 2.667 33.90 | 4.167 4.52 | 5.67 2.26  
 1.250 3.39 | 2.750 61.02 | 4.250 4.52 | 5.75 2.26  
 1.333 3.39 | 2.833 61.02 | 4.333 4.52 | 5.83 2.26  
 1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
 1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Max.Eff.Inten.(mm/hr)= 88.14 56.11  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 5.44 (ii) 16.38 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.20 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.39 0.36 2.634 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 24.08 41.52  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.43 0.73

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 77.0 Ia = Dep. 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 ( 5202) |  
ID= 1 DT= 5.0 min
 Area (ha)= 29.70  
 Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 14.85 14.85  
 Dep. Storage (mm)= 1.50 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 444.97 40.00

Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

----- TRANSFORMED HYETOGRAPH -----  
 TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN

hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr  
 0.083 2.26 | 1.583 5.65 | 3.083 12.43 | 4.58 3.39  
 0.167 2.26 | 1.667 5.65 | 3.167 12.43 | 4.67 3.39  
 0.250 2.26 | 1.750 5.65 | 3.250 12.43 | 4.75 3.39  
 0.333 2.26 | 1.833 5.65 | 3.333 12.43 | 4.83 3.39  
 0.417 2.26 | 1.917 5.65 | 3.417 12.43 | 4.92 3.39  
 0.500 2.26 | 2.000 5.65 | 3.500 12.43 | 5.00 3.39  
 0.583 3.39 | 2.083 6.78 | 3.583 5.65 | 5.08 2.26  
 0.667 3.39 | 2.167 6.78 | 3.667 5.65 | 5.17 2.26  
 0.750 3.39 | 2.250 6.78 | 3.750 5.65 | 5.25 2.26  
 0.833 3.39 | 2.333 6.78 | 3.833 5.65 | 5.33 2.26  
 0.917 3.39 | 2.417 6.78 | 3.917 5.65 | 5.42 2.26  
 1.000 3.39 | 2.500 6.78 | 4.000 5.65 | 5.50 2.26  
 1.083 3.39 | 2.583 33.90 | 4.083 4.52 | 5.58 2.26  
 1.167 3.39 | 2.667 33.90 | 4.167 4.52 | 5.67 2.26  
 1.250 3.39 | 2.750 61.02 | 4.250 4.52 | 5.75 2.26  
 1.333 3.39 | 2.833 61.02 | 4.333 4.52 | 5.83 2.26  
 1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
 1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Max.Eff.Inten.(mm/hr)= 88.14 44.29  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 6.58 (ii) 18.62 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.18 0.06

\*TOTALS\*  
 PEAK FLOW (cms)= 2.33 0.99 2.985 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.25 3.00  
 RUNOFF VOLUME (mm)= 55.00 20.06 32.29  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.97 0.36 0.57

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 72.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL  
 THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

-----  
 | ROUTE CHN( 0521) |  
IN= 2----> OUT= 1
 Routing time step (min)= 5.00

----- DATA FOR SECTION ( 815.4) -----

Distance	Elevation	Manning	
415.18	83.86	0.0900	
461.15	83.40	0.0900	
501.83	83.53	0.0900 / 0.0700	Main Channel
513.93	82.96	0.0700	Main Channel
526.85	83.23	0.0700 / 0.0900	Main Channel
569.63	83.21	0.0900	
610.76	83.63	0.0900	
663.54	83.88	0.0900	

----- TRAVEL TIME TABLE -----

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.05	83.00	.378E+02	0.0	0.11	83.81
0.09	83.05	.151E+03	0.0	0.17	52.79
0.14	83.09	.340E+03	0.1	0.22	40.29
0.18	83.14	.605E+03	0.3	0.27	33.26
0.23	83.18	.946E+03	0.5	0.32	28.66
0.27	83.23	.151E+04	0.9	0.33	27.77
0.32	83.27	.323E+04	1.8	0.31	29.51
0.37	83.32	.510E+04	3.2	0.34	26.44
0.42	83.37	.713E+04	5.0	0.38	23.61
0.46	83.42	.934E+04	7.3	0.42	21.44
0.51	83.47	.121E+05	10.0	0.45	20.23
0.56	83.52	.156E+05	13.4	0.47	19.44
0.61	83.57	.196E+05	17.7	0.49	18.52
0.66	83.61	.240E+05	22.8	0.52	17.49
0.71	83.66	.286E+05	28.4	0.54	16.75
0.75	83.71	.336E+05	34.7	0.56	16.14
0.80	83.76	.390E+05	41.8	0.58	15.55
0.85	83.81	.448E+05	49.8	0.60	14.99
0.90	83.86	.510E+05	58.8	0.63	14.46

----- hydrograph ----- <- pipe / channel ->  
 AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 5202) 29.70 2.98 3.00 32.29 0.36 0.34  
 OUTFLOW : ID= 1 ( 0521) 29.70 1.50 3.25 32.28 0.30 0.31

-----  
 | ADD HYD ( 0113) |  
1 + 2 = 3
 ID1= 1 ( 0521): 29.70 1.503 3.25 32.28



+ ID2= 2 ( 5212): 15.70 2.634 3.00 41.52  
 ID = 3 ( 0113): 45.40 3.870 3.00 35.47

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0114) |
| 1 + 2 = 3 |
|-----|
| AREA QPEAK TPEAK R.V. |
| (ha) (cms) (hrs) (mm) |
|-----|
| ID1= 1 ( 0106): 192.20 5.468 3.25 22.21 |
| + ID2= 2 ( 0113): 45.40 3.870 3.00 35.47 |
|-----|
| ID = 3 ( 0114): 237.60 8.746 3.00 24.74 |
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0505) |
| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00
  
```

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100	
69.13	79.02	0.1100	
92.42	79.04	0.1100	
98.70	80.89	0.1100	
128.88	81.13	0.1100	
199.00	81.23	0.1100	
266.11	81.68	0.1100	
306.94	81.73	0.1100	
331.74	81.55	0.1100 / 0.0700	Main Channel
336.74	80.15	0.0700	Main Channel
346.34	81.64	0.0700 / 0.0900	Main Channel
394.77	81.68	0.0900	
431.64	81.44	0.0900	
477.44	82.08	0.0900	
481.25	82.81	0.0900	
501.51	83.16	0.0900	

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.418E+03	0.4	0.15	18.59
0.23	79.25	.899E+03	1.3	0.25	11.41

0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten. (mm/hr)=	88.14	41.63
over (min)	5.00	20.00
Storage Coeff. (min)=	5.46 (ii)	17.79 (ii)
Unit Hyd. Tpeak (min)=	5.00	20.00
Unit Hyd. peak (cms)=	0.20	0.06

PEAK FLOW (cms)=	2.38	0.26	2.558 (iii)
TIME TO PEAK (hrs)=	3.00	3.17	3.00
RUNOFF VOLUME (mm)=	50.50	18.34	39.24
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.32	0.69

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 68.0 Ia = Dep. 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 ( 0108) |
| 1 + 2 = 3 |
|-----|
| AREA QPEAK TPEAK R.V. |
| (ha) (cms) (hrs) (mm) |
|-----|
| ID1= 1 ( 0505): 237.60 8.136 3.08 24.74 |
| + ID2= 2 ( 5052): 15.90 2.558 3.00 39.24 |
|-----|
| ID = 3 ( 0108): 253.50 9.827 3.00 25.65 |
  
```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0506) |
| IN= 2---> OUT= 1 | Routing time step (min)'= 5.00
  
```

0.35	79.36	.140E+04	2.7	0.33	8.70
0.46	79.48	.191E+04	4.4	0.39	7.22
0.58	79.59	.244E+04	6.5	0.46	6.26
0.69	79.71	.299E+04	8.9	0.51	5.58
0.81	79.82	.355E+04	11.7	0.56	5.08
0.92	79.94	.413E+04	14.7	0.61	4.68
1.04	80.05	.472E+04	18.1	0.65	4.36
1.15	80.17	.533E+04	21.7	0.70	4.09
1.27	80.28	.598E+04	25.7	0.74	3.88
1.38	80.40	.666E+04	29.7	0.76	3.74
1.50	80.51	.740E+04	33.7	0.78	3.67
1.61	80.63	.822E+04	38.1	0.79	3.59
1.73	80.74	.909E+04	43.1	0.81	3.52
1.84	80.86	.100E+05	48.6	0.83	3.45
1.96	80.97	.111E+05	48.4	0.74	3.83
2.07	81.09	.128E+05	43.8	0.59	4.86
2.19	81.21	.155E+05	40.6	0.45	6.35

```

<--- hydrograph ---> <-pipe / channel->
| AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL |
| (ha) (cms) (hrs) (mm) (m) (m/s) |
|-----|
INFLOW : ID= 2 ( 0114) 237.60 8.75 3.00 24.74 0.68 0.51
OUTFLOW: ID= 1 ( 0505) 237.60 8.14 3.08 24.74 0.65 0.49
  
```

```

| CALIB |
| STANDHYD ( 5052) | Area (ha)= 15.90
| ID= 1 DT= 5.0 min | Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00
  
```

IMPERVIOUS		PERVIOUS (i)	
Surface Area (ha)=	11.77	PERVIOUS	4.13
Dep. Storage (mm)=	6.00	PERVIOUS	8.00
Average Slope (%)=	1.00	PERVIOUS	1.00
Length (m)=	325.58	PERVIOUS	40.00
Mannings n =	0.013	PERVIOUS	0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

---- TRANSFORMED HYETOGRAPH ----
| TIME RAIN | TIME RAIN | TIME RAIN | TIME RAIN |
| hrs mm/hr | hrs mm/hr | hrs mm/hr | hrs mm/hr |
|-----|
0.083 2.26 | 1.583 5.65 | 3.083 12.43 | 4.58 3.39 |
0.167 2.26 | 1.667 5.65 | 3.167 12.43 | 4.67 3.39 |
0.250 2.26 | 1.750 5.65 | 3.250 12.43 | 4.75 3.39 |
0.333 2.26 | 1.833 5.65 | 3.333 12.43 | 4.83 3.39 |
0.417 2.26 | 1.917 5.65 | 3.417 12.43 | 4.92 3.39 |
  
```

<----- DATA FOR SECTION ( 304.1) ----->

Distance	Elevation	Manning
0.00	81.42	0.0900
7.45	81.36	0.0900
32.34	80.38	0.0900
45.97	80.05	0.0900
65.23	79.93	0.0900
84.49	80.35	0.0900
113.49	80.02	0.0900
136.48	80.07	0.0900
188.81	79.81	0.0900
197.86	79.25	0.0900 / 0.0700
200.70	78.22	0.0700
203.29	79.35	0.0700 / 0.0900
204.01	79.67	0.0900
236.47	80.40	0.0900
277.80	80.48	0.0900
305.35	80.37	0.0900
346.67	80.41	0.0900
387.99	80.33	0.0900
415.54	80.53	0.0900
447.88	80.49	0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.11	78.34	.979E+01	0.0	0.23	21.53
0.23	78.45	.392E+02	0.0	0.37	13.56
0.34	78.56	.881E+02	0.1	0.48	10.35
0.46	78.68	.157E+03	0.3	0.58	8.54
0.57	78.79	.245E+03	0.6	0.67	7.36
0.68	78.91	.352E+03	0.9	0.76	6.52
0.80	79.02	.480E+03	1.4	0.84	5.88
0.91	79.13	.627E+03	1.9	0.92	5.38
1.03	79.25	.793E+03	2.7	0.99	4.98
1.15	79.37	.103E+04	3.8	1.09	4.55
1.28	79.50	.135E+04	5.2	1.16	4.28
1.40	79.62	.175E+04	7.1	1.20	4.12
1.52	79.75	.228E+04	9.3	1.21	4.08
1.65	79.87	.318E+04	11.7	1.10	4.52
1.77	80.00	.524E+04	15.8	0.90	5.52
1.90	80.12	.973E+04	24.3	0.74	6.69
2.02	80.24	.158E+05	39.7	0.75	6.62
2.15	80.37	.230E+05	59.2	0.77	6.46
2.27	80.49	.349E+05	90.3	0.77	6.44

```

<--- hydrograph ---> <-pipe / channel->
| AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL |
| (ha) (cms) (hrs) (mm) (m) (m/s) |
|-----|
INFLOW : ID= 2 ( 0108) 253.50 9.83 3.00 25.65 1.55 1.19
  
```

OUTFLOW: ID= 1 ( 0506) 253.50 9.33 3.08 25.65 1.53 1.21

RUNOFF VOLUME (mm)= 50.50 20.65 40.05  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.37 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 71.0 Ia = Dep. 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 ( 5062) Area (ha)= 11.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 75.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 8.78 2.92  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 279.28 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 49.01  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 4.98 (ii) 16.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.22 0.06  
 \*TOTALS\*  
 PEAK FLOW (cms)= 1.77 0.23 1.929 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00

ADD HYD ( 0110)  
 1 + 2 = 3  
 AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)  
 ID1= 1 ( 0506): 253.50 9.328 3.08 25.65  
 + ID2= 2 ( 5062): 11.70 1.929 3.00 40.05  
 ID = 3 ( 0110): 265.20 10.344 3.08 26.29

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 STANDHYD ( 5102) Area (ha)= 1.70  
 ID= 1 DT= 5.0 min Total Imp(%)= 64.00 Dir. Conn.(%)= 52.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 1.09 0.61  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 106.46 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26

0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 38.44  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 2.79 (ii) 15.53 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.28 0.07  
 \*TOTALS\*  
 PEAK FLOW (cms)= 0.21 0.04 0.240 (iii)  
 TIME TO PEAK (hrs)= 3.00 3.17 3.00  
 RUNOFF VOLUME (mm)= 50.50 17.16 34.49  
 TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.30 0.61

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.12	79.13	.361E+03	0.6	0.24	9.91
0.23	79.25	.776E+03	2.1	0.40	6.09
0.35	79.37	.121E+04	4.3	0.52	4.65
0.47	79.48	.165E+04	7.1	0.63	3.85
0.59	79.60	.211E+04	10.5	0.72	3.34
0.70	79.72	.258E+04	14.4	0.81	2.98
0.82	79.84	.307E+04	18.8	0.89	2.71
0.94	79.95	.357E+04	23.8	0.97	2.50
1.05	80.07	.408E+04	29.2	1.04	2.33
1.17	80.19	.461E+04	35.1	1.10	2.19
1.29	80.30	.515E+04	41.5	1.17	2.07
1.41	80.42	.571E+04	48.4	1.23	1.97
1.52	80.54	.631E+04	55.8	1.28	1.88
1.64	80.66	.695E+04	63.8	1.33	1.81
1.76	80.77	.762E+04	72.3	1.38	1.76
1.87	80.89	.833E+04	81.4	1.42	1.71
2.00	81.02	.931E+04	92.4	1.44	1.68
2.13	81.14	.109E+05	104.8	1.39	1.74
2.25	81.27	.140E+05	120.9	1.25	1.93

<---- hydrograph ----> <-pipe / channel-->  
 AREA QPEAK TPEAK R.V. MAX DEPTH MAX VEL  
 (ha) (cms) (hrs) (mm) (m) (m/s)  
 INFLOW : ID= 2 ( 5102) 1.70 0.24 3.00 34.49 0.05 0.24  
 OUTFLOW: ID= 1 ( 0511) 1.70 0.18 3.00 34.48 0.03 0.24

ROUTE CHN ( 0511)  
 IN= 2----> OUT= 1 Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 553.6) ----->

Distance	Elevation	Manning	
0.00	81.24	0.1100	
33.01	80.98	0.1100	
49.97	81.27	0.1100	
54.18	80.35	0.1100	
60.88	81.23	0.1100 / 0.0700	Main Channel
69.13	79.02	0.0700	Main Channel
92.42	79.04	0.0700	Main Channel
98.70	80.89	0.0700 / 0.1100	Main Channel
128.88	81.13	0.1100	
199.00	81.23	0.1100	

CALIB  
 STANDHYD ( 5112) Area (ha)= 3.00  
 ID= 1 DT= 5.0 min Total Imp(%)= 69.00 Dir. Conn.(%)= 58.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha)= 2.07 0.93  
 Dep. Storage (mm)= 6.00 8.00  
 Average Slope (%)= 1.00 1.00  
 Length (m)= 141.42 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr

0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 46.23  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.31 (ii) 15.14 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.07

PEAK FLOW (cms)= 0.42 0.07  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 20.13  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.36

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0117)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0511):	1.70	0.176	3.00	34.48
+ ID2= 2 ( 5112):	3.00	0.468	3.00	37.74
ID = 3 ( 0117):	4.70	0.644	3.00	36.56

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0512)  
 IN= 2--> OUT= 1 Routing time step (min)'= 5.00

Distance	Elevation	Manning
0.00	80.80	0.0900
9.73	80.46	0.0900
14.10	82.04	0.0900
17.18	82.28	0.0900
41.13	82.12	0.0900 / 0.0700
46.88	79.71	0.0700
51.41	80.90	0.0700 / 0.0900
94.29	80.56	0.0900
175.64	80.72	0.0900
192.09	80.85	0.0900

TRAVEL TIME TABLE

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.13	79.84	.255E+02	0.0	0.14	54.71
0.26	79.98	.102E+03	0.0	0.23	34.47
0.40	80.11	.229E+03	0.1	0.30	26.30
0.53	80.24	.408E+03	0.3	0.36	21.71
0.66	80.37	.637E+03	0.6	0.42	18.71
0.79	80.51	.934E+03	0.9	0.46	16.84
0.93	80.64	.245E+04	1.6	0.31	24.96
1.06	80.77	.873E+04	4.6	0.25	31.51
1.19	80.90	.179E+05	11.4	0.30	26.08
1.32	81.04	.278E+05	22.6	0.38	20.45
1.46	81.17	.381E+05	37.5	0.46	16.91
1.60	81.31	.484E+05	55.4	0.54	14.57
1.74	81.45	.588E+05	76.0	0.61	12.90
1.87	81.59	.693E+05	99.3	0.67	11.63
2.01	81.72	.798E+05	125.0	0.73	10.64
2.15	81.86	.903E+05	153.1	0.80	9.83
2.29	82.00	.101E+06	183.5	0.85	9.16
2.42	82.14	.112E+06	214.3	0.90	8.68
2.56	82.27	.123E+06	244.4	0.93	8.40

INFLOW : ID= 2 ( 0117)	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
OUTFLOW : ID= 1 ( 0512)	4.70	0.64	3.00	36.56	0.69	0.43
	4.70	0.38	3.00	36.50	0.57	0.37

CALIB STANDHYD ( 5122)	Area (ha)=	3.90
ID= 1 DT= 5.0 min	Total Imp(%)=	68.00
	Dir. Conn.(%)=	57.00

	IMPERVIOUS	PERVIOUS (i)
Surface Area (ha)=	2.65	1.25
Dep. Storage (mm)=	6.00	8.00
Average Slope (%)=	1.00	1.00
Length (m)=	161.25	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)= 88.14 45.55  
 over (min) 5.00 20.00  
 Storage Coeff. (min)= 3.58 (ii) 15.48 (ii)  
 Unit Hyd. Tpeak (min)= 5.00 20.00  
 Unit Hyd. peak (cms)= 0.26 0.07

PEAK FLOW (cms)= 0.53 0.09  
 TIME TO PEAK (hrs)= 3.00 3.17  
 RUNOFF VOLUME (mm)= 50.50 20.00  
 TOTAL RAINFALL (mm)= 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.35

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 71.0 Ia = Dep. 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 ( 0119)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0512):	4.70	0.384	3.00	36.50
+ ID2= 2 ( 5122):	3.90	0.597	3.00	37.38
ID = 3 ( 0119):	8.60	0.955	3.00	36.90

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0120)	AREA	QPEAK	TPEAK	R.V.
1 + 2 = 3	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0110):	265.20	10.344	3.00	26.29
+ ID2= 2 ( 0119):	8.60	0.955	3.00	36.90
ID = 3 ( 0120):	273.80	11.063	3.00	26.62

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB NASHYD ( 6011)	Area (ha)=	44.10	Curve Number (CN)=	62.0
ID= 1 DT= 5.0 min	Ia (mm)=	8.00	# of Linear Res.(N)=	3.00
	U.H. Tp (hrs)=	0.83		

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39

0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 2.027

PEAK FLOW (cms) = 0.608 (i)  
 TIME TO PEAK (hrs) = 3.917  
 RUNOFF VOLUME (mm) = 11.521  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6012) | Area (ha) = 11.00  
 ID= 1 DT= 5.0 min | Total Imp(%) = 28.00 Dir. Conn.(%) = 16.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 3.08 7.92  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 270.00 40.00  
 Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26

ID= 1 DT= 5.0 min | Ia (mm) = 8.00 # of Linear Res.(N) = 3.00  
 U.H. Tp(hrs) = 0.95

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Unit Hyd Qpeak (cms) = 1.753

PEAK FLOW (cms) = 0.545 (i)  
 TIME TO PEAK (hrs) = 4.000  
 RUNOFF VOLUME (mm) = 11.521  
 TOTAL RAINFALL (mm) = 56.500  
 RUNOFF COEFFICIENT = 0.204

(i) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

CALIB  
 STANDHYD ( 6022) | Area (ha) = 12.90  
 ID= 1 DT= 5.0 min | Total Imp(%) = 35.00 Dir. Conn.(%) = 23.00

IMPERVIOUS PERVIOUS (i)  
 Surface Area (ha) = 4.51 8.38  
 Dep. Storage (mm) = 6.00 8.00  
 Average Slope (%) = 1.00 1.00  
 Length (m) = 293.26 40.00  
 Mannings n = 0.013 0.250

0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr) = 88.14 26.15  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 4.88 (ii) 19.74 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.22 0.06

\*TOTALS\*  
 PEAK FLOW (cms) = 0.41 0.30 0.600 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.25 3.00  
 RUNOFF VOLUME (mm) = 50.50 13.46 19.39  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.24 0.34

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!  
 \*\*\*\*\* WARNING: FOR AREAS WITH IMPERVIOUS RATIOS BELOW 20%  
 YOU SHOULD CONSIDER SPLITTING THE AREA.

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0124)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.  
 (ha) (cms) (hrs) (mm)  
 ID1= 1 ( 6011): 44.10 0.608 3.92 11.52  
 + ID2= 2 ( 6012): 11.00 0.600 3.00 19.39  
 ID = 3 ( 0124): 55.10 0.784 3.50 13.09

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
 NASHYD ( 6021) | Area (ha) = 43.60 Curve Number (CN) = 62.0

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr) = 88.14 26.96  
 over (min) = 5.00 20.00  
 Storage Coeff. (min) = 5.12 (ii) 19.80 (ii)  
 Unit Hyd. Tpeak (min) = 5.00 20.00  
 Unit Hyd. peak (cms) = 0.21 0.06

\*TOTALS\*  
 PEAK FLOW (cms) = 0.69 0.33 0.896 (iii)  
 TIME TO PEAK (hrs) = 3.00 3.25 3.00  
 RUNOFF VOLUME (mm) = 50.50 13.66 22.13  
 TOTAL RAINFALL (mm) = 56.50 56.50 56.50  
 RUNOFF COEFFICIENT = 0.89 0.24 0.39

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
 CN\* = 62.0 Ia = Dep. 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 ( 0125)  
 1 + 2 = 3 | AREA QPEAK TPEAK R.V.

```

-----
            (ha)      (cms)     (hrs)     (mm)
ID1= 1 ( 0021): 43.60 0.545   4.00    11.52
+ ID2= 2 ( 0022): 12.90 0.896   3.00    22.13
-----
ID = 3 ( 0125): 56.50 0.981   3.00    13.94

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ADD HYD ( 0126)|
| 1 + 2 = 3 |
-----
            AREA    QPEAK    TPEAK    R.V.
            (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0124): 55.10 0.784   3.50    13.09
+ ID2= 2 ( 0125): 56.50 0.981   3.00    13.94
-----
ID = 3 ( 0126): 111.60 1.699   3.00    13.52

```

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

```

| ROUTE CHN( 0003)|
| IN= 2--> OUT= 1 | Routing time step (min)= 5.00
-----

```

```

<----- DATA FOR SECTION (2135.9) ----->
Distance    Elevation    Manning
0.00        92.58        0.1400
8.54        92.59        0.1400
22.11       92.47        0.1400
48.74       91.83        0.1400
67.59       91.58        0.1400
86.45       91.21        0.1400
103.50      90.80        0.1400
118.09      90.23        0.1400
127.84      90.09        0.1400 / 0.0700 Main Channel
129.84      89.59        0.0700 Main Channel
130.34      90.09        0.0700 / 0.1400 Main Channel
140.57      90.14        0.1400
161.87      90.11        0.1400
177.03      90.04        0.1400
188.67      89.87        0.1400
199.59      90.31        0.1400
212.02      90.96        0.1400
225.58      91.35        0.1400
252.71      91.66        0.1400
274.11      91.86        0.1400

```

```

<----- TRAVEL TIME TABLE ----->
DEPTH      ELEV      VOLUME     FLOW RATE   VELOCITY     TRAV.TIME
(m)        (m)      (cu.m.)    (cms)       (m/s)        (min)

```

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV.TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.333	2.26	1.833	5.65	3.333	12.43
0.417	2.26	1.917	5.65	3.417	12.43
0.500	2.26	2.000	5.65	3.500	12.43
0.583	3.39	2.083	6.78	3.583	5.65
0.667	3.39	2.167	6.78	3.667	5.65
0.750	3.39	2.250	6.78	3.750	5.65
0.833	3.39	2.333	6.78	3.833	5.65
0.917	3.39	2.417	6.78	3.917	5.65
1.000	3.39	2.500	6.78	4.000	5.65
1.083	3.39	2.583	33.90	4.083	4.52
1.167	3.39	2.667	33.90	4.167	4.52
1.250	3.39	2.750	61.02	4.250	4.52
1.333	3.39	2.833	61.02	4.333	4.52
1.417	3.39	2.917	88.14	4.417	4.52
1.500	3.39	3.000	88.14	4.500	6.00

```

Max.Eff.Inten.(mm/hr)= 88.14 43.25
over (min) = 5.00 20.00
Storage Coeff. (min)= 6.89 (ii) 19.04 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.18 0.06

```

```

*TOTALS*
PEAK FLOW (cms)= 2.46 1.18 3.238 (iii)
TIME TO PEAK (hrs)= 3.00 3.25 3.00
RUNOFF VOLUME (mm)= 55.00 19.85 31.10
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.97 0.35 0.55

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 72.0 Ia = Dep. 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 ( 6102)| Area (ha)= 21.10
| ID= 1 DT= 5.0 min| Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 10.55 10.55
Dep. Storage (mm)= 1.50 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 375.06 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

	0.12	89.71	.358E+02	0.0	0.19	81.29
	0.25	89.84	.143E+03	0.0	0.30	51.21
	0.37	89.96	.689E+03	0.2	0.23	67.44
	0.50	90.09	.278E+04	0.6	0.20	77.83
	0.67	90.26	.132E+05	3.4	0.23	65.31
	0.83	90.42	.262E+05	9.3	0.33	46.76
	1.00	90.59	.403E+05	17.9	0.41	37.64
	1.17	90.76	.556E+05	28.8	0.48	32.17
	1.33	90.92	.721E+05	42.0	0.53	28.63
	1.50	91.09	.903E+05	57.1	0.58	26.37
	1.67	91.26	.110E+06	74.7	0.62	24.65
	1.83	91.42	.133E+06	93.4	0.64	23.71
	2.00	91.59	.159E+06	113.6	0.66	23.26
	2.17	91.76	.188E+06	136.6	0.67	22.96
	2.33	91.92	.222E+06	168.5	0.70	21.97
	2.50	92.09	.258E+06	211.3	0.75	20.33
	2.67	92.26	.294E+06	258.5	0.81	18.98
	2.83	92.42	.332E+06	310.1	0.86	17.85
	3.00	92.59	.371E+06	358.0	0.88	17.29

```

<----- hydrograph -----> <-pipe / channel-->
            AREA    QPEAK    TPEAK    R.V.    MAX DEPTH    MAX VEL
INFLOW : ID= 2 ( 0126) 111.60 1.70 3.00 13.52 0.57 0.21
OUTFLOW: ID= 1 ( 0003) 111.60 1.06 4.67 13.52 0.53 0.20

```

```

| CALIB |
| STANDHYD ( 6032)| Area (ha)= 34.60
| ID= 1 DT= 5.0 min| Total Imp(%)= 47.00 Dir. Conn.(%)= 32.00
-----

```

```

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 16.26 18.34
Dep. Storage (mm)= 1.50 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 480.28 40.00
Mannings n = 0.013 0.250

```

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

```

----- TRANSFORMED HYETOGRAPH -----
TIME     RAIN     TIME     RAIN     TIME     RAIN     TIME     RAIN
hrs      mm/hr   hrs      mm/hr   hrs      mm/hr   hrs      mm/hr
0.083    2.26    1.583    5.65    3.083    12.43    4.58    3.39
0.167    2.26    1.667    5.65    3.167    12.43    4.67    3.39
0.250    2.26    1.750    5.65    3.250    12.43    4.75    3.39

```

```

----- TRANSFORMED HYETOGRAPH -----
TIME     RAIN     TIME     RAIN     TIME     RAIN     TIME     RAIN
hrs      mm/hr   hrs      mm/hr   hrs      mm/hr   hrs      mm/hr
0.083    2.26    1.583    5.65    3.083    12.43    4.58    3.39
0.167    2.26    1.667    5.65    3.167    12.43    4.67    3.39
0.250    2.26    1.750    5.65    3.250    12.43    4.75    3.39
0.333    2.26    1.833    5.65    3.333    12.43    4.83    3.39
0.417    2.26    1.917    5.65    3.417    12.43    4.92    3.39
0.500    2.26    2.000    5.65    3.500    12.43    5.00    3.39
0.583    3.39    2.083    6.78    3.583    5.65    5.08    2.26
0.667    3.39    2.167    6.78    3.667    5.65    5.17    2.26
0.750    3.39    2.250    6.78    3.750    5.65    5.25    2.26
0.833    3.39    2.333    6.78    3.833    5.65    5.33    2.26
0.917    3.39    2.417    6.78    3.917    5.65    5.42    2.26
1.000    3.39    2.500    6.78    4.000    5.65    5.50    2.26
1.083    3.39    2.583    33.90    4.083    4.52    5.58    2.26
1.167    3.39    2.667    33.90    4.167    4.52    5.67    2.26
1.250    3.39    2.750    61.02    4.250    4.52    5.75    2.26
1.333    3.39    2.833    61.02    4.333    4.52    5.83    2.26
1.417    3.39    2.917    88.14    4.417    4.52    5.92    2.26
1.500    3.39    3.000    88.14    4.500    4.52    6.00    2.26

```

```

Max.Eff.Inten.(mm/hr)= 88.14 41.57
over (min) = 5.00 20.00
Storage Coeff. (min)= 5.94 (ii) 18.28 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.19 0.06

```

```

*TOTALS*
PEAK FLOW (cms)= 1.68 0.66 2.121 (iii)
TIME TO PEAK (hrs)= 3.00 3.25 3.00
RUNOFF VOLUME (mm)= 55.00 18.90 31.54
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.97 0.33 0.56

```

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 70.0 Ia = Dep. 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 ( 0128)|
| 1 + 2 = 3 |
-----
            AREA    QPEAK    TPEAK    R.V.
            (ha)    (cms)    (hrs)    (mm)
ID1= 1 ( 0003): 111.60 1.061 4.67 13.52
+ ID2= 2 ( 6032): 34.60 3.238 3.00 31.10
-----

```

=====  
ID = 3 ( 0128): 146.20 3.546 3.00 17.68

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ADD HYD ( 0128) |  
3 + 2 = 1
AREA OPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 3 ( 0128): 146.20 3.546 3.00 17.68  
+ ID2= 2 ( 6102): 21.10 2.121 3.00 31.54  
-----  
ID = 1 ( 0128): 167.30 5.668 3.00 19.43

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ROUTE CHN( 0604) |  
IN= 2----> OUT= 1
Routing time step (min)'= 5.00

<----- DATA FOR SECTION (1414.9) ----->

Distance	Elevation	Manning
0.00	86.75	0.0900
3.09	87.40	0.0900
18.33	87.41	0.0900
35.33	86.99	0.0900
73.84	86.75	0.0900
103.33	86.41	0.0900
120.33	86.11	0.0900
129.46	86.13	0.0900
143.37	85.32	0.0900
154.33	85.02	0.0900
161.57	85.09	0.0900
163.05	84.78	0.0900 / 0.0700
166.55	83.78	0.0700
168.05	84.78	0.0700 / 0.1100
172.02	85.29	0.1100
191.39	86.19	0.1100
270.18	85.78	0.1100
296.33	86.36	0.1100
324.34	86.68	0.1100
368.56	87.05	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.17	83.95	.465E+02	0.0	0.03	432.88
0.33	84.11	.186E+03	0.0	0.04	272.70
0.50	84.28	.418E+03	0.0	0.05	208.11

0.500 2.26 | 2.000 5.65 | 3.500 12.43 | 5.00 3.39  
0.583 3.39 | 2.083 6.78 | 3.583 5.65 | 5.08 2.26  
0.667 3.39 | 2.167 6.78 | 3.667 5.65 | 5.17 2.26  
0.750 3.39 | 2.250 6.78 | 3.750 5.65 | 5.25 2.26  
0.833 3.39 | 2.333 6.78 | 3.833 5.65 | 5.33 2.26  
0.917 3.39 | 2.417 6.78 | 3.917 5.65 | 5.42 2.26  
1.000 3.39 | 2.500 6.78 | 4.000 5.65 | 5.50 2.26  
1.083 3.39 | 2.583 33.90 | 4.083 4.52 | 5.58 2.26  
1.167 3.39 | 2.667 33.90 | 4.167 4.52 | 5.67 2.26  
1.250 3.39 | 2.750 61.02 | 4.250 4.52 | 5.75 2.26  
1.333 3.39 | 2.833 61.02 | 4.333 4.52 | 5.83 2.26  
1.417 3.39 | 2.917 88.14 | 4.417 4.52 | 5.92 2.26  
1.500 3.39 | 3.000 88.14 | 4.500 4.52 | 6.00 2.26

Max.Eff.Inten.(mm/hr)= 88.14 74.55  
over (min) 5.00 20.00  
Storage Coeff. (min)= 6.17 (ii) 15.95 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.19 0.07

PEAK FLOW (cms)= 3.75 0.55  
TIME TO PEAK (hrs)= 3.00 3.17  
RUNOFF VOLUME (mm)= 50.50 26.16  
TOTAL RAINFALL (mm)= 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.46

\*TOTALS\*  
4.133 (iii)

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 79.0 Ia = Dep. 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 ( 0130) |  
1 + 2 = 3
AREA OPEAK TPEAK R.V.  
(ha) (cms) (hrs) (mm)  
ID1= 1 ( 0604): 167.30 1.997 3.17 19.42  
+ ID2= 2 ( 6042): 24.00 4.133 3.00 42.95  
-----  
ID = 3 ( 0130): 191.30 5.920 3.00 22.37

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

-----  
| ROUTE CHN( 0605) |  
IN= 2----> OUT= 1
Routing time step (min)'= 5.00

	AREA (ha)	OPEAK (cms)	TPEAK (hrs)	R.V. (mm)	MAX DEPTH (m)	MAX VEL (m/s)
0.67	84.45	.743E+03	0.1	0.06	171.79	
0.83	84.61	.116E+04	0.1	0.08	148.04	
1.00	84.78	.167E+04	0.2	0.09	131.10	
1.20	84.98	.252E+04	0.4	0.10	110.62	
1.41	85.19	.469E+04	0.6	0.09	121.59	
1.61	85.39	.842E+04	1.1	0.09	126.63	
1.81	85.59	.133E+05	1.8	0.09	121.99	
2.01	85.79	.192E+05	2.7	0.10	116.68	
2.22	86.00	.298E+05	4.0	0.09	125.45	
2.42	86.20	.487E+05	5.6	0.08	143.80	
2.62	86.40	.736E+05	9.0	0.08	137.02	
2.82	86.60	.102E+06	13.1	0.09	130.82	
3.03	86.81	.136E+06	18.1	0.09	125.42	
3.23	87.01	.178E+06	24.4	0.09	121.07	
3.43	87.21	.224E+06	34.2	0.10	108.80	
3.63	87.41	.271E+06	44.8	0.11	100.89	

<---- hydrograph ----> <-pipe / channel-->  
AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0128) 167.30 5.67 3.00 19.43 2.42 0.08  
OUTFLOW : ID= 1 ( 0604) 167.30 2.00 3.17 19.42 1.85 0.09

\*\*\*\* WARNING: COMPUTATIONS FAILED TO CONVERGE.

-----  
| CALIB |  
| STANDHYD ( 6042) |  
ID= 1 DT= 5.0 min
Area (ha)= 24.00  
Total Imp(%)= 78.00 Dir. Conn.(%)= 69.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 18.72 5.28  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 400.00 40.00  
Mannings n = 0.013 0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39

<----- DATA FOR SECTION ( 801.4) ----->

Distance	Elevation	Manning
0.00	82.95	0.1100
3.78	82.95	0.1100
9.24	82.49	0.1100
50.67	82.10	0.1100
105.12	82.17	0.1100
119.34	81.56	0.1100
150.67	81.66	0.1100
157.23	82.37	0.1100
190.03	82.57	0.1100
223.75	82.27	0.1100
252.32	82.50	0.1100
254.65	81.95	0.1100 / 0.0700
258.15	80.95	0.0700
259.65	81.95	0.0700 / 0.1100
263.15	82.90	0.1100
278.14	82.80	0.1100
282.35	81.68	0.1100
285.02	82.19	0.1100
336.56	82.53	0.1100
404.40	82.68	0.1100

<----- TRAVEL TIME TABLE ----->

DEPTH (m)	ELEV (m)	VOLUME (cu.m.)	FLOW RATE (cms)	VELOCITY (m/s)	TRAV.TIME (min)
0.08	81.03	.125E+02	0.0	0.11	104.30
0.17	81.12	.499E+02	0.0	0.18	65.70
0.25	81.20	.112E+03	0.0	0.24	50.14
0.33	81.28	.199E+03	0.1	0.29	41.39
0.42	81.37	.312E+03	0.1	0.34	35.67
0.50	81.45	.449E+03	0.2	0.38	31.59
0.58	81.53	.611E+03	0.4	0.42	28.50
0.67	81.62	.117E+04	0.5	0.33	36.11
0.75	81.70	.316E+04	1.1	0.24	49.12
0.83	81.78	.560E+04	2.1	0.27	45.15
0.92	81.87	.827E+04	3.4	0.30	40.03
1.00	81.95	.112E+05	5.2	0.33	35.88
1.10	82.05	.151E+05	8.0	0.38	31.68
1.21	82.16	.207E+05	8.8	0.30	39.37
1.31	82.26	.306E+05	14.0	0.33	36.36
1.41	82.36	.433E+05	20.3	0.34	35.59
1.52	82.47	.606E+05	28.4	0.34	35.57
1.62	82.57	.828E+05	41.0	0.36	33.68
1.73	82.68	.109E+06	60.1	0.39	30.35

<---- hydrograph ----> <-pipe / channel-->  
AREA OPEAK TPEAK R.V. MAX DEPTH MAX VEL  
(ha) (cms) (hrs) (mm) (m) (m/s)  
INFLOW : ID= 2 ( 0130) 191.30 5.92 3.00 22.37 1.03 0.34

OUTFLOW: ID= 1 ( 0605) 191.30 2.62 3.50 22.37 0.87 0.28

RUNOFF VOLUME (mm)= 50.50 22.66 39.92
TOTAL RAINFALL (mm)= 56.50 56.50 56.50
RUNOFF COEFFICIENT = 0.89 0.40 0.71

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 75.0 Ia = Dep. 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 ( 6112) Area (ha)= 11.40
ID= 1 DT= 5.0 min Total Imp(%)= 72.00 Dir. Conn.(%)= 62.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 8.21 3.19
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 275.68 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Contains 20 rows of data.

Max.Eff.Inten.(mm/hr)= 88.14 52.52
Storage Coeff. (min)= 4.94 (ii) 16.18 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.22 0.06
PEAK FLOW (cms)= 1.65 0.27
TIME TO PEAK (hrs)= 3.00 3.17

ADD HYD ( 0139)
1 + 2 = 3
AREA (ha) QPEAK (cms) TPEAK (hrs) R.V. (mm)
ID1= 1 ( 0605): 191.30 2.622 3.50 22.37
+ ID2= 2 ( 6112): 11.40 1.835 3.00 39.92
ID = 3 ( 0139): 202.70 3.745 3.00 23.35

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB
STANDHYD ( 6052) Area (ha)= 15.90
ID= 1 DT= 5.0 min Total Imp(%)= 74.00 Dir. Conn.(%)= 65.00

IMPERVIOUS PERVIOUS (i)
Surface Area (ha)= 11.77 4.13
Dep. Storage (mm)= 6.00 8.00
Average Slope (%)= 1.00 1.00
Length (m)= 325.58 40.00
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

--- TRANSFORMED HYETOGRAPH ---

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Contains 10 rows of data.

Table with 8 columns: TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr, TIME hrs, RAIN mm/hr. Contains 10 rows of data.

Max.Eff.Inten.(mm/hr)= 88.14 39.13
Storage Coeff. (min)= 5.46 (ii) 18.10 (ii)
Unit Hyd. Tpeak (min)= 5.00 20.00
Unit Hyd. peak (cms)= 0.20 0.06
PEAK FLOW (cms)= 2.38 0.25
TIME TO PEAK (hrs)= 3.00 3.25
RUNOFF VOLUME (mm)= 50.50 17.30
TOTAL RAINFALL (mm)= 56.50 56.50
RUNOFF COEFFICIENT = 0.89 0.31 0.69

(i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:
CN\* = 66.0 Ia = Dep. 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 ( 0139): 202.70 3.745 3.00 23.35
+ ID2= 2 ( 6052): 15.90 2.545 3.00 38.88
ID = 3 ( 0132): 218.60 6.290 3.00 24.48

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ROUTE CHN( 0530)
IN= 2---> OUT= 1 | Routing time step (min)'= 5.00

DATA FOR SECTION ( 350.0)
Distance Elevation Manning

Table with 4 columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Contains 20 rows of data.

TRAVEL TIME TABLE

Table with 6 columns: DEPTH (m), ELEV (m), VOLUME (cu.m.), FLOW RATE (cms), VELOCITY (m/s), TRAV.TIME (min). Contains 20 rows of data.

hydrograph
INFLOW : ID= 2 ( 0132) 218.60 6.29 3.00 24.48
OUTFLOW: ID= 1 ( 0530) 218.60 4.95 3.08 24.48

RUNOFF COEFFICIENT = 0.89 0.30 0.63

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. 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 ( 0134)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0530):	218.60	4.951	3.08	24.48
+ ID2= 2 ( 5302):	5.80	0.847	3.00	35.64
=====				
ID = 3 ( 0134):	224.40	5.351	3.08	24.77

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

ADD HYD ( 0135)				
1 + 2 = 3				
	AREA	QPEAK	TPEAK	R.V.
	(ha)	(cms)	(hrs)	(mm)
ID1= 1 ( 0120):	273.80	11.063	3.00	26.62
+ ID2= 2 ( 0134):	224.40	5.351	3.08	24.77
=====				
ID = 3 ( 0135):	498.20	16.405	3.00	25.79

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

| ROUTE CHN ( 0507) |  
| IN= 2---> OUT= 1 | Routing time step (min)= 5.00

<----- DATA FOR SECTION ( 40.0) ----->			
Distance	Elevation	Manning	
0.00	79.36	0.0900	
7.45	79.32	0.0900	
13.77	79.27	0.0900	
20.24	79.24	0.0900	
27.28	79.26	0.0900	
34.16	79.13	0.0900	
40.79	79.05	0.0900	
47.58	79.05	0.0900	
54.30	79.07	0.0900	

Surface Area (ha)= 24.45 24.45  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 570.96 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	12.43	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)= 88.14 45.91  
over (min)= 10.00 20.00  
Storage Coeff. (min)= 7.64 (ii) 19.51 (ii)  
Unit Hyd. Tpeak (min)= 10.00 20.00  
Unit Hyd. peak (cms)= 0.13 0.06

PEAK FLOW (cms)= 3.56 1.66 4.659 (iii)  
TIME TO PEAK (hrs)= 3.00 3.25 3.00  
RUNOFF VOLUME (mm)= 50.50 21.05 31.65  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50  
RUNOFF COEFFICIENT = 0.89 0.37 0.56

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 74.0 Ia = Dep. 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 ( 5302) Area (ha)= 5.80  
ID= 1 DT= 5.0 min Total Imp(%)= 66.00 Dir. Conn.(%)= 56.00

IMPERVIOUS PERVIOUS (i)  
Surface Area (ha)= 3.83 1.97  
Dep. Storage (mm)= 6.00 8.00  
Average Slope (%)= 1.00 1.00  
Length (m)= 196.64 40.00  
Mannings n = 0.013 0.250

NOTE: RAINFALL WAS TRANSFORMED TO 5.0 MIN. TIME STEP.

---- TRANSFORMED HYETOGRAPH ----							
TIME	RAIN	TIME	RAIN	TIME	RAIN	TIME	RAIN
hrs	mm/hr	hrs	mm/hr	hrs	mm/hr	hrs	mm/hr
0.083	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max. Eff. Inten. (mm/hr)= 88.14 36.34  
over (min)= 5.00 20.00  
Storage Coeff. (min)= 4.03 (ii) 17.06 (ii)  
Unit Hyd. Tpeak (min)= 5.00 20.00  
Unit Hyd. peak (cms)= 0.24 0.06

\*TOTALS\*

PEAK FLOW (cms)= 0.77 0.11 0.847 (iii)  
TIME TO PEAK (hrs)= 3.00 3.17 3.00  
RUNOFF VOLUME (mm)= 50.50 16.72 35.64  
TOTAL RAINFALL (mm)= 56.50 56.50 56.50

60.87 79.24 0.0900  
71.39 79.48 0.0900  
73.53 78.96 0.0900  
76.96 78.07 0.0900  
82.21 77.08 0.0900 / 0.0700 Main Channel  
85.82 76.28 0.0700 Main Channel  
89.97 76.89 0.0700 Main Channel  
91.35 77.38 0.0700 / 0.0900 Main Channel  
95.27 78.68 0.0900  
98.44 79.63 0.0900  
102.89 79.89 0.0900

<----- TRAVEL TIME TABLE ----->

DEPTH	ELEV	VOLUME	FLOW RATE	VELOCITY	TRAV. TIME
(m)	(m)	(cu.m.)	(cms)	(m/s)	(min)
0.16	76.44	.113E+03	0.0	0.14	88.10
0.32	76.60	.451E+03	0.1	0.23	55.50
0.49	76.76	.101E+04	0.4	0.30	42.35
0.65	76.92	.180E+04	0.9	0.37	34.57
0.81	77.09	.276E+04	1.6	0.44	28.86
0.97	77.25	.388E+04	2.7	0.52	24.37
1.14	77.41	.516E+04	4.0	0.59	21.56
1.30	77.57	.660E+04	5.7	0.66	19.26
1.46	77.74	.822E+04	7.8	0.72	17.67
1.62	77.90	.100E+05	10.1	0.77	16.48
1.79	78.06	.120E+05	12.8	0.82	15.54
1.95	78.22	.141E+05	15.9	0.87	14.74
2.11	78.39	.163E+05	19.4	0.91	14.06
2.27	78.55	.187E+05	23.2	0.95	13.47
2.44	78.71	.212E+05	27.3	0.99	12.95
2.60	78.87	.239E+05	31.9	1.02	12.50
2.76	79.04	.267E+05	36.8	1.06	12.10
2.92	79.20	.320E+05	39.4	0.94	13.56
3.09	79.36	.409E+05	45.7	0.85	14.94

<---- hydrograph ----> <-pipe / channel-->

	AREA	QPEAK	TPEAK	R.V.	MAX DEPTH	MAX VEL
	(ha)	(cms)	(hrs)	(mm)	(m)	(m/s)
INFLOW : ID= 2 ( 0135)	498.20	16.41	3.00	25.79	1.97	0.87
OUTFLOW: ID= 1 ( 0507)	498.20	13.30	3.33	25.79	1.81	0.83

CALIB  
STANDHYD ( 5072) Area (ha)= 48.90  
ID= 1 DT= 5.0 min Total Imp(%)= 50.00 Dir. Conn.(%)= 36.00

IMPERVIOUS PERVIOUS (i)



ADD HYD ( 0122)  
1 + 2 = 3

	AREA (ha)	QPEAK (cms)	TPEAK (hrs)	R.V. (mm)
ID1= 1 ( 0507):	498.20	13.299	3.33	25.79
+ ID2= 2 ( 5072):	48.90	4.659	3.00	31.65
=====				
ID = 3 ( 0122):	547.10	16.503	3.17	26.31

NOTE: PEAK FLOWS DO NOT INCLUDE BASEFLOWS IF ANY.

CALIB  
STANDHYD ( 5402)  
ID= 1 DT= 5.0 min

Area (ha)= 9.40  
Total Imp(%)= 50.00 Dir. Conn.(%)= 35.00

	IMPERVIOUS (ha)	PERVIOUS (i)
Surface Area	4.70	4.70
Dep. Storage	6.00	8.00
Average Slope	1.00	1.00
Length	250.33	40.00
Mannings n	0.013	0.250

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	2.26	1.583	5.65	3.083	12.43	4.58	3.39
0.167	2.26	1.667	5.65	3.167	12.43	4.67	3.39
0.250	2.26	1.750	5.65	3.250	12.43	4.75	3.39
0.333	2.26	1.833	5.65	3.333	12.43	4.83	3.39
0.417	2.26	1.917	5.65	3.417	12.43	4.92	3.39
0.500	2.26	2.000	5.65	3.500	12.43	5.00	3.39
0.583	3.39	2.083	6.78	3.583	5.65	5.08	2.26
0.667	3.39	2.167	6.78	3.667	5.65	5.17	2.26
0.750	3.39	2.250	6.78	3.750	5.65	5.25	2.26
0.833	3.39	2.333	6.78	3.833	5.65	5.33	2.26
0.917	3.39	2.417	6.78	3.917	5.65	5.42	2.26
1.000	3.39	2.500	6.78	4.000	5.65	5.50	2.26
1.083	3.39	2.583	33.90	4.083	4.52	5.58	2.26
1.167	3.39	2.667	33.90	4.167	4.52	5.67	2.26
1.250	3.39	2.750	61.02	4.250	4.52	5.75	2.26
1.333	3.39	2.833	61.02	4.333	4.52	5.83	2.26
1.417	3.39	2.917	88.14	4.417	4.52	5.92	2.26
1.500	3.39	3.000	88.14	4.500	4.52	6.00	2.26

Max.Eff.Inten.(mm/hr)=	88.14	36.65	
over (min)	5.00	20.00	
Storage Coeff. (min)=	4.66 (ii)	17.64 (ii)	
Unit Hyd. Tpeak (min)=	5.00	20.00	
Unit Hyd. peak (cms)=	0.22	0.06	
		*TOTALS*	
PEAK FLOW (cms)=	0.77	0.26	0.947 (iii)
TIME TO PEAK (hrs)=	3.00	3.25	3.00
RUNOFF VOLUME (mm)=	50.50	16.79	28.58
TOTAL RAINFALL (mm)=	56.50	56.50	56.50
RUNOFF COEFFICIENT =	0.89	0.30	0.51

\*\*\*\*\* WARNING: STORAGE COEFF. IS SMALLER THAN TIME STEP!

- (i) CN PROCEDURE SELECTED FOR PERVIOUS LOSSES:  
CN\* = 66.0 Ia = Dep. Storage (Above)
- (ii) TIME STEP (DT) SHOULD BE SMALLER OR EQUAL THAN THE STORAGE COEFFICIENT.
- (iii) PEAK FLOW DOES NOT INCLUDE BASEFLOW IF ANY.

STORE HYD ( 1505)  
ID= 1 DT= 5.0min  
AREA (ha)= 30.00  
QPEAK (cms)= 0.78  
TPEAK (hrs)= 15.58  
VOLUME (mm)= 402.14

TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms	TIME hrs	FLOW cms
0.00	0.00	31.33	0.10	62.67	0.25	94.00	0.26	125.33	0.16
0.08	0.00	31.42	0.10	62.75	0.25	94.08	0.26	125.42	0.16
0.17	0.00	31.50	0.10	62.83	0.25	94.17	0.25	125.50	0.16
0.25	0.00	31.58	0.10	62.92	0.25	94.25	0.25	125.58	0.16
0.33	0.00	31.67	0.10	63.00	0.25	94.33	0.25	125.67	0.17
0.42	0.00	31.75	0.10	63.08	0.25	94.42	0.25	125.75	0.16
0.50	0.00	31.83	0.10	63.17	0.25	94.50	0.25	125.83	0.16
0.58	0.00	31.92	0.10	63.25	0.24	94.58	0.25	125.92	0.17
0.67	0.00	32.00	0.10	63.33	0.24	94.67	0.24	126.00	0.15
0.75	0.00	32.08	0.10	63.42	0.24	94.75	0.25	126.08	0.16
0.83	0.00	32.17	0.10	63.50	0.23	94.83	0.24	126.17	0.16
0.92	0.00	32.25	0.10	63.58	0.24	94.92	0.25	126.25	0.16
1.00	0.00	32.33	0.10	63.67	0.24	95.00	0.25	126.33	0.16
1.08	0.00	32.42	0.10	63.75	0.24	95.08	0.25	126.42	0.16
1.17	0.00	32.50	0.10	63.83	0.23	95.17	0.24	126.50	0.17
1.25	0.00	32.58	0.10	63.92	0.23	95.25	0.21	126.58	0.16
1.33	0.00	32.67	0.10	64.00	0.23	95.33	0.25	126.67	0.16
1.42	0.00	32.75	0.10	64.08	0.23	95.42	0.22	126.75	0.17
1.50	0.00	32.83	0.10	64.17	0.23	95.50	0.22	126.83	0.17
1.58	0.00	32.92	0.10	64.25	0.24	95.58	0.23	126.92	0.17
1.67	0.00	33.00	0.10	64.33	0.23	95.67	0.24	127.00	0.17

1.75	0.00	33.08	0.10	64.42	0.23	95.75	0.26	127.08	0.17
1.83	0.00	33.17	0.10	64.50	0.23	95.83	0.24	127.17	0.18
1.92	0.00	33.25	0.11	64.58	0.23	95.92	0.23	127.25	0.17
2.00	0.00	33.33	0.11	64.67	0.24	96.00	0.24	127.33	0.18
2.08	0.00	33.42	0.11	64.75	0.24	96.08	0.24	127.42	0.18
2.17	0.00	33.50	0.11	64.83	0.24	96.17	0.24	127.50	0.16
2.25	0.00	33.58	0.11	64.92	0.24	96.25	0.24	127.58	0.18
2.33	0.00	33.67	0.11	65.00	0.24	96.33	0.24	127.67	0.17
2.42	0.00	33.75	0.11	65.08	0.23	96.42	0.24	127.75	0.18
2.50	0.00	33.83	0.11	65.17	0.23	96.50	0.24	127.83	0.17
2.58	0.00	33.92	0.11	65.25	0.23	96.58	0.23	127.92	0.17
2.67	0.00	34.00	0.11	65.33	0.23	96.67	0.24	128.00	0.17
2.75	0.00	34.08	0.11	65.42	0.22	96.75	0.23	128.08	0.17
2.83	0.00	34.17	0.11	65.50	0.22	96.83	0.23	128.17	0.17
2.92	0.00	34.25	0.11	65.58	0.22	96.92	0.24	128.25	0.18
3.00	0.00	34.33	0.11	65.67	0.22	97.00	0.23	128.33	0.18
3.08	0.00	34.42	0.11	65.75	0.22	97.08	0.22	128.42	0.19
3.17	0.00	34.50	0.11	65.83	0.22	97.17	0.23	128.50	0.18
3.25	0.00	34.58	0.11	65.92	0.21	97.25	0.22	128.58	0.17
3.33	0.00	34.67	0.11	66.00	0.21	97.33	0.25	128.67	0.18
3.42	0.00	34.75	0.11	66.08	0.21	97.42	0.22	128.75	0.18
3.50	0.00	34.83	0.11	66.17	0.20	97.50	0.24	128.83	0.18
3.58	0.00	34.92	0.11	66.25	0.20	97.58	0.23	128.92	0.18
3.67	0.00	35.00	0.11	66.33	0.20	97.67	0.22	129.00	0.18
3.75	0.00	35.08	0.11	66.42	0.20	97.75	0.23	129.08	0.19
3.83	0.00	35.17	0.11	66.50	0.19	97.83	0.22	129.17	0.17
3.92	0.00	35.25	0.11	66.58	0.20	97.92	0.21	129.25	0.17
4.00	0.00	35.33	0.11	66.67	0.20	98.00	0.22	129.33	0.17
4.08	0.00	35.42	0.11	66.75	0.20	98.08	0.23	129.42	0.18
4.17	0.00	35.50	0.11	66.83	0.19	98.17	0.21	129.50	0.18
4.25	0.00	35.58	0.11	66.92	0.19	98.25	0.21	129.58	0.18
4.33	0.00	35.67	0.11	67.00	0.20	98.33	0.23	129.67	0.18
4.42	0.00	35.75	0.11	67.08	0.20	98.42	0.21	129.75	0.18
4.50	0.00	35.83	0.11	67.17	0.20	98.50	0.21	129.83	0.18
4.58	0.00	35.92	0.11	67.25	0.20	98.58	0.23	129.92	0.18
4.67	0.00	36.00	0.11	67.33	0.20	98.67	0.22	130.00	0.18
4.75	0.00	36.08	0.11	67.42	0.21	98.75	0.23	130.08	0.17
4.83	0.00	36.17	0.11	67.50	0.22	98.83	0.24	130.17	0.17
4.92	0.00	36.25	0.11	67.58	0.22	98.92	0.22	130.25	0.17
5.00	0.00	36.33	0.11	67.67	0.23	99.00	0.20	130.33	0.17
5.08	0.00	36.42	0.12	67.75	0.24	99.08	0.20	130.42	0.18
5.17	0.00	36.50	0.12	67.83	0.26	99.17	0.22	130.50	0.18
5.25	0.00	36.58	0.12	67.92	0.27	99.25	0.21	130.58	0.18
5.33	0.00	36.67	0.12	68.00	0.28	99.33	0.22	130.67	0.17
5.42	0.00	36.75	0.12	68.08	0.31	99.42	0.21	130.75	0.17
5.50	0.00	36.83	0.12	68.17	0.32	99.50	0.20	130.83	0.18
5.58	0.00	36.92	0.12	68.25	0.34	99.58	0.21	130.92	0.17
5.67	0.00	37.00	0.12	68.33	0.35	99.67	0.20	131.00	0.17
5.75	0.00	37.08	0.12	68.42	0.38	99.75	0.19	131.08	0.17
5.83	0.00	37.17	0.12	68.50	0.39	99.83	0.20	131.17	0.18

5.92	0.00	37.25	0.12	68.58	0.40	99.92	0.22	131.25	0.18
6.00	0.00	37.33	0.12	68.67	0.42	100.00	0.21	131.33	0.17
6.08	0.00	37.42	0.12	68.75	0.44	100.08	0.20	131.42	0.17
6.17	0.00	37.50	0.12	68.83	0.46	100.17	0.21	131.50	0.17
6.25	0.00	37.58	0.12	68.92	0.49	100.25	0.19	131.58	0.17
6.33	0.00	37.67	0.13	69.00	0.51	100.33	0.19	131.67	0.17
6.42	0.00	37.75	0.12	69.08	0.54	100.42	0.19	131.75	0.17
6.50	0.00	37.83	0.12	69.17	0.56	100.50	0.19	131.83	0.17
6.58	0.00	37.92	0.12	69.25	0.60	100.58	0.19	131.92	0.17
6.67	0.00	38.00	0.12	69.33	0.64	100.67	0.19	132.00	0.16
6.75	0.00	38.08	0.12	69.42	0.67	100.75	0.21	132.08	0.17
6.83	0.00	38.17	0.12	69.50	0.67	100.83	0.19	132.17	0.17
6.92	0.00	38.25	0.12	69.58	0.68	100.92	0.19	132.25	0.17
7.00	0.00	38.33	0.12	69.67	0.65	101.00	0.19	132.33	0.17
7.08	0.00	38.42	0.12	69.75	0.66	101.08	0.19	132.42	0.18
7.17	0.00	38.50	0.12	69.83	0.66	101.17	0.20	132.50	0.17
7.25	0.00	38.58	0.12	69.92	0.67	101.25			

10.08	0.00	41.42	0.22	72.75	0.68	104.08	0.18	135.42	0.15	14.25	0.00	45.58	0.25	76.92	0.45	108.25	0.15	139.58	0.13
10.17	0.00	41.50	0.23	72.83	0.67	104.17	0.18	135.50	0.15	14.33	0.00	45.67	0.25	77.00	0.42	108.33	0.16	139.67	0.14
10.25	0.00	41.58	0.23	72.92	0.66	104.25	0.17	135.58	0.15	14.42	0.00	45.75	0.25	77.08	0.43	108.42	0.16	139.75	0.14
10.33	0.00	41.67	0.23	73.00	0.64	104.33	0.17	135.67	0.14	14.50	0.00	45.83	0.26	77.17	0.43	108.50	0.15	139.83	0.13
10.42	0.00	41.75	0.24	73.08	0.63	104.42	0.17	135.75	0.15	14.58	0.00	45.92	0.25	77.25	0.42	108.58	0.15	139.92	0.14
10.50	0.00	41.83	0.25	73.17	0.63	104.50	0.18	135.83	0.16	14.67	0.00	46.00	0.26	77.33	0.41	108.67	0.15	140.00	0.14
10.58	0.00	41.92	0.25	73.25	0.61	104.58	0.17	135.92	0.15	14.75	0.00	46.08	0.26	77.42	0.43	108.75	0.16	140.08	0.13
10.67	0.00	42.00	0.26	73.33	0.62	104.67	0.16	136.00	0.15	14.83	0.00	46.17	0.25	77.50	0.41	108.83	0.15	140.17	0.13
10.75	0.00	42.08	0.25	73.42	0.61	104.75	0.16	136.08	0.15	14.92	0.00	46.25	0.26	77.58	0.43	108.92	0.15	140.25	0.13
10.83	0.00	42.17	0.26	73.50	0.62	104.83	0.18	136.17	0.15	15.00	0.00	46.33	0.26	77.67	0.39	109.00	0.15	140.33	0.13
10.92	0.00	42.25	0.26	73.58	0.60	104.92	0.16	136.25	0.15	15.08	0.71	46.42	0.26	77.75	0.39	109.08	0.15	140.42	0.14
11.00	0.00	42.33	0.26	73.67	0.62	105.00	0.17	136.33	0.15	15.17	0.74	46.50	0.26	77.83	0.37	109.17	0.15	140.50	0.13
11.08	0.00	42.42	0.26	73.75	0.58	105.08	0.16	136.42	0.15	15.25	0.74	46.58	0.26	77.92	0.39	109.25	0.15	140.58	0.13
11.17	0.00	42.50	0.26	73.83	0.59	105.17	0.16	136.50	0.15	15.33	0.74	46.67	0.26	78.00	0.39	109.33	0.14	140.67	0.13
11.25	0.00	42.58	0.26	73.92	0.57	105.25	0.16	136.58	0.15	15.42	0.77	46.75	0.26	78.08	0.39	109.42	0.15	140.75	0.13
11.33	0.00	42.67	0.26	74.00	0.57	105.33	0.16	136.67	0.14	15.50	0.76	46.83	0.25	78.17	0.37	109.50	0.15	140.83	0.13
11.42	0.00	42.75	0.25	74.08	0.57	105.42	0.16	136.75	0.15	15.58	0.78	46.92	0.25	78.25	0.36	109.58	0.14	140.92	0.13
11.50	0.00	42.83	0.26	74.17	0.56	105.50	0.16	136.83	0.14	15.67	0.78	47.00	0.25	78.33	0.37	109.67	0.15	141.00	0.13
11.58	0.00	42.92	0.25	74.25	0.58	105.58	0.16	136.92	0.14	15.75	0.77	47.08	0.25	78.42	0.38	109.75	0.14	141.08	0.13
11.67	0.00	43.00	0.25	74.33	0.58	105.67	0.16	137.00	0.14	15.83	0.77	47.17	0.26	78.50	0.36	109.83	0.15	141.17	0.13
11.75	0.00	43.08	0.25	74.42	0.58	105.75	0.17	137.08	0.15	15.92	0.77	47.25	0.26	78.58	0.36	109.92	0.14	141.25	0.13
11.83	0.00	43.17	0.25	74.50	0.59	105.83	0.16	137.17	0.14	16.00	0.76	47.33	0.26	78.67	0.36	110.00	0.14	141.33	0.13
11.92	0.00	43.25	0.25	74.58	0.60	105.92	0.16	137.25	0.15	16.08	0.74	47.42	0.26	78.75	0.37	110.08	0.14	141.42	0.13
12.00	0.00	43.33	0.25	74.67	0.57	106.00	0.16	137.33	0.15	16.17	0.74	47.50	0.26	78.83	0.34	110.17	0.14	141.50	0.13
12.08	0.00	43.42	0.25	74.75	0.56	106.08	0.16	137.42	0.14	16.25	0.74	47.58	0.25	78.92	0.35	110.25	0.14	141.58	0.13
12.17	0.00	43.50	0.25	74.83	0.54	106.17	0.16	137.50	0.14	16.33	0.72	47.67	0.26	79.00	0.36	110.33	0.15	141.67	0.13
12.25	0.00	43.58	0.25	74.92	0.56	106.25	0.17	137.58	0.14	16.42	0.69	47.75	0.26	79.08	0.35	110.42	0.15	141.75	0.13
12.33	0.00	43.67	0.25	75.00	0.53	106.33	0.16	137.67	0.15	16.50	0.69	47.83	0.26	79.17	0.35	110.50	0.14	141.83	0.13
12.42	0.00	43.75	0.25	75.08	0.51	106.42	0.16	137.75	0.14	16.58	0.67	47.92	0.26	79.25	0.36	110.58	0.14	141.92	0.13
12.50	0.00	43.83	0.26	75.17	0.51	106.50	0.16	137.83	0.14	16.67	0.66	48.00	0.25	79.33	0.36	110.67	0.14	142.00	0.13
12.58	0.00	43.92	0.26	75.25	0.51	106.58	0.16	137.92	0.14	16.75	0.64	48.08	0.25	79.42	0.33	110.75	0.15	142.08	0.12
12.67	0.00	44.00	0.26	75.33	0.51	106.67	0.16	138.00	0.14	16.83	0.63	48.17	0.26	79.50	0.33	110.83	0.14	142.17	0.13
12.75	0.00	44.08	0.26	75.42	0.50	106.75	0.16	138.08	0.14	16.92	0.63	48.25	0.25	79.58	0.33	110.92	0.15	142.25	0.13
12.83	0.00	44.17	0.26	75.50	0.50	106.83	0.15	138.17	0.14	17.00	0.60	48.33	0.25	79.67	0.32	111.00	0.15	142.33	0.13
12.92	0.00	44.25	0.27	75.58	0.49	106.92	0.15	138.25	0.14	17.08	0.58	48.42	0.25	79.75	0.33	111.08	0.14	142.42	0.12
13.00	0.00	44.33	0.26	75.67	0.49	107.00	0.16	138.33	0.14	17.17	0.58	48.50	0.25	79.83	0.33	111.17	0.14	142.50	0.13
13.08	0.00	44.42	0.26	75.75	0.49	107.08	0.16	138.42	0.14	17.25	0.57	48.58	0.25	79.92	0.32	111.25	0.14	142.58	0.13
13.17	0.00	44.50	0.26	75.83	0.48	107.17	0.16	138.50	0.14	17.33	0.56	48.67	0.24	80.00	0.33	111.33	0.15	142.67	0.13
13.25	0.00	44.58	0.26	75.92	0.47	107.25	0.15	138.58	0.14	17.42	0.55	48.75	0.24	80.08	0.34	111.42	0.14	142.75	0.13
13.33	0.00	44.67	0.26	76.00	0.47	107.33	0.16	138.67	0.14	17.50	0.54	48.83	0.24	80.17	0.32	111.50	0.15	142.83	0.12
13.42	0.00	44.75	0.26	76.08	0.48	107.42	0.16	138.75	0.14	17.58	0.51	48.92	0.24	80.25	0.31	111.58	0.14	142.92	0.13
13.50	0.00	44.83	0.26	76.17	0.46	107.50	0.15	138.83	0.14	17.67	0.50	49.00	0.24	80.33	0.33	111.67	0.14	143.00	0.12
13.58	0.00	44.92	0.26	76.25	0.45	107.58	0.16	138.92	0.14	17.75	0.48	49.08	0.25	80.42	0.31	111.75	0.14	143.08	0.12
13.67	0.00	45.00	0.26	76.33	0.45	107.67	0.15	139.00	0.14	17.83	0.47	49.17	0.24	80.50	0.32	111.83	0.14	143.17	0.12
13.75	0.00	45.08	0.26	76.42	0.43	107.75	0.15	139.08	0.14	17.92	0.47	49.25	0.24	80.58	0.31	111.92	0.14	143.25	0.12
13.83	0.00	45.17	0.25	76.50	0.44	107.83	0.16	139.17	0.13	18.00	0.45	49.33	0.24	80.67	0.31	112.00	0.15	143.33	0.12
13.92	0.00	45.25	0.25	76.58	0.46	107.92	0.16	139.25	0.14	18.08	0.44	49.42	0.23	80.75	0.33	112.08	0.15	143.42	0.12
14.00	0.00	45.33	0.25	76.67	0.43	108.00	0.16	139.33	0.14	18.17	0.41	49.50	0.23	80.83	0.31	112.17	0.14	143.50	0.12
14.08	0.00	45.42	0.25	76.75	0.44	108.08	0.15	139.42	0.14	18.25	0.42	49.58	0.24	80.92	0.32	112.25	0.14	143.58	0.12
14.17	0.00	45.50	0.25	76.83	0.43	108.17	0.15	139.50	0.14	18.33	0.40	49.67	0.23	81.00	0.32	112.33	0.14	143.67	0.12

18.42	0.39	49.75	0.24	81.08	0.31	112.42	0.15	143.75	0.12	22.58	0.21	53.92	0.30	85.25	0.46	116.58	0.14	147.92	0.11
18.50	0.38	49.83	0.24	81.17	0.31	112.50	0.15	143.83	0.12	22.67	0.21	54.00	0.30	85.33	0.44	116.67	0.14	148.00	0.11
18.58	0.38	49.92	0.23	81.25	0.31	112.58	0.15	143.92	0.12	22.75	0.21	54.08	0.30	85.42	0.45	116.75	0.14	148.08	0.11
18.67	0.37	50.00	0.23	81.33	0.31	112.67	0.15	144.00	0.12	22.83	0.20	54.17	0.31	85.50	0.45	116.83	0.14	148.17	0.11
18.75	0.37	50.08	0.23	81.42	0.31	112.75	0.14	144.08	0.12	22.92	0.20	54.25	0.30	85.58	0.45	116.92	0.14	148.25	0.11
18.83	0.36	50.17	0.24	81.50	0.32	112.83	0.15	144.17	0.12	23.00	0.20	54.33	0.31	85.67	0.45	117.00	0.14	148.33	0.11
18.92	0.35	50.25	0.23	81.58	0.32	112.92	0.14	144.25	0.12	23.08	0.20	54.42	0.30	85.75	0.46	117.08	0.14	148.42	0.11
19.00	0.34	50.33	0.23	81.67	0.34	113.00	0.15	144.33	0.12	23.17	0.20	54.50	0.31	85.83	0.45	117.17	0.14	148.50	0.11
19.08	0.34	50.42	0.23	81.75	0.34	113.08	0.15	144.42	0.12	23.25	0.20	54.58	0.32	85.92	0.47	117.25	0.14	148.58	0.11
19.17	0.34	50.50	0.23	81.83	0.35	113.17	0.14	144.50	0.12	23.33	0.19	54.67	0.32	86.00	0.44	117.33	0.14	148.67	0.11
19.25	0.34	50.58	0.23	81.92	0.37	113.25	0.15	144.58	0.12	23.42	0.19	54.75	0.32	86.08	0.45	117.42	0.14	148.75	0.11
19.33	0.33	50.67	0.23	82.00	0.36	113.33	0.15	144.67	0.12	23.50	0.19	54.83	0.32	86.17	0.43	117.50	0		

26.75	0.14	58.08	0.29	89.42	0.31	120.75	0.14	152.08	0.11
26.83	0.14	58.17	0.29	89.50	0.30	120.83	0.14	152.17	0.11
26.92	0.14	58.25	0.29	89.58	0.29	120.92	0.14	152.25	0.11
27.00	0.14	58.33	0.29	89.67	0.29	121.00	0.14	152.33	0.10
27.08	0.13	58.42	0.29	89.75	0.29	121.08	0.14	152.42	0.11
27.17	0.13	58.50	0.29	89.83	0.28	121.17	0.14	152.50	0.11
27.25	0.13	58.58	0.29	89.92	0.30	121.25	0.14	152.58	0.10
27.33	0.13	58.67	0.28	90.00	0.31	121.33	0.14	152.67	0.10
27.42	0.13	58.75	0.28	90.08	0.31	121.42	0.14	152.75	0.10
27.50	0.13	58.83	0.28	90.17	0.30	121.50	0.14	152.83	0.10
27.58	0.13	58.92	0.29	90.25	0.30	121.58	0.14	152.92	0.10
27.67	0.13	59.00	0.29	90.33	0.31	121.67	0.14	153.00	0.11
27.75	0.13	59.08	0.29	90.42	0.30	121.75	0.14	153.08	0.10
27.83	0.13	59.17	0.28	90.50	0.31	121.83	0.14	153.17	0.10
27.92	0.12	59.25	0.28	90.58	0.31	121.92	0.14	153.25	0.11
28.00	0.13	59.33	0.28	90.67	0.31	122.00	0.15	153.33	0.10
28.08	0.12	59.42	0.27	90.75	0.31	122.08	0.14	153.42	0.11
28.17	0.12	59.50	0.27	90.83	0.30	122.17	0.14	153.50	0.10
28.25	0.12	59.58	0.27	90.92	0.31	122.25	0.14	153.58	0.10
28.33	0.12	59.67	0.26	91.00	0.30	122.33	0.14	153.67	0.10
28.42	0.12	59.75	0.26	91.08	0.30	122.42	0.15	153.75	0.11
28.50	0.12	59.83	0.26	91.17	0.32	122.50	0.15	153.83	0.10
28.58	0.12	59.92	0.26	91.25	0.30	122.58	0.15	153.92	0.10
28.67	0.12	60.00	0.25	91.33	0.28	122.67	0.14	154.00	0.10
28.75	0.12	60.08	0.25	91.42	0.30	122.75	0.15	154.08	0.10
28.83	0.12	60.17	0.25	91.50	0.28	122.83	0.14	154.17	0.10
28.92	0.12	60.25	0.25	91.58	0.31	122.92	0.14	154.25	0.10
29.00	0.12	60.33	0.25	91.67	0.28	123.00	0.15	154.33	0.10
29.08	0.12	60.42	0.24	91.75	0.30	123.08	0.15	154.42	0.10
29.17	0.11	60.50	0.24	91.83	0.31	123.17	0.15	154.50	0.10
29.25	0.11	60.58	0.24	91.92	0.27	123.25	0.15	154.58	0.10
29.33	0.11	60.67	0.23	92.00	0.28	123.33	0.15	154.67	0.10
29.42	0.11	60.75	0.24	92.08	0.29	123.42	0.15	154.75	0.10
29.50	0.11	60.83	0.23	92.17	0.27	123.50	0.15	154.83	0.10
29.58	0.11	60.92	0.23	92.25	0.28	123.58	0.15	154.92	0.10
29.67	0.11	61.00	0.23	92.33	0.28	123.67	0.15	155.00	0.10
29.75	0.11	61.08	0.23	92.42	0.31	123.75	0.15	155.08	0.10
29.83	0.11	61.17	0.23	92.50	0.28	123.83	0.15	155.17	0.10
29.92	0.11	61.25	0.22	92.58	0.28	123.92	0.15	155.25	0.10
30.00	0.11	61.33	0.23	92.67	0.28	124.00	0.15	155.33	0.10
30.08	0.11	61.42	0.23	92.75	0.28	124.08	0.15	155.42	0.10
30.17	0.11	61.50	0.24	92.83	0.27	124.17	0.15	155.50	0.10
30.25	0.11	61.58	0.24	92.92	0.28	124.25	0.15	155.58	0.10
30.33	0.11	61.67	0.23	93.00	0.28	124.33	0.14	155.67	0.10
30.42	0.11	61.75	0.23	93.08	0.27	124.42	0.15	155.75	0.10
30.50	0.11	61.83	0.23	93.17	0.29	124.50	0.15	155.83	0.10
30.58	0.11	61.92	0.23	93.25	0.28	124.58	0.16	155.92	0.10
30.67	0.11	62.00	0.23	93.33	0.26	124.67	0.15	156.00	0.10
30.75	0.11	62.08	0.23	93.42	0.27	124.75	0.15	156.08	0.10
30.83	0.11	62.17	0.23	93.50	0.27	124.83	0.15	156.17	0.10

30.92	0.11	62.25	0.23	93.58	0.26	124.92	0.17	156.25	0.10
31.00	0.11	62.33	0.24	93.67	0.26	125.00	0.16		
31.08	0.10	62.42	0.25	93.75	0.28	125.08	0.16		
31.17	0.10	62.50	0.25	93.83	0.25	125.17	0.16		
31.25	0.10	62.58	0.26	93.92	0.28	125.25	0.16		

STORE HVD( 1605)	AREA	(ha)=	30.00
ID= 1 DT= 5.0min	QPEAK	(cms)=	1.37
	TPEAK	(hrs)=	71.92
	VOLUME	(mm)=	625.27

TIME	FLOW	TIME	FLOW	TIME	FLOW	TIME	FLOW
hrs	cms	hrs	cms	hrs	cms	hrs	cms
0.00	0.00	31.25	0.15	62.50	0.38	93.75	0.37
0.08	0.00	31.33	0.15	62.58	0.38	93.83	0.36
0.17	0.00	31.42	0.15	62.67	0.38	93.92	0.36
0.25	0.00	31.50	0.15	62.75	0.38	94.00	0.36
0.33	0.00	31.58	0.15	62.83	0.38	94.08	0.36
0.42	0.00	31.67	0.15	62.92	0.38	94.17	0.36
0.50	0.00	31.75	0.15	63.00	0.37	94.25	0.36
0.58	0.00	31.83	0.14	63.08	0.38	94.33	0.36
0.67	0.00	31.92	0.14	63.17	0.37	94.42	0.36
0.75	0.00	32.00	0.14	63.25	0.37	94.50	0.36
0.83	0.00	32.08	0.14	63.33	0.37	94.58	0.36
0.92	0.00	32.17	0.14	63.42	0.37	94.67	0.36
1.00	0.00	32.25	0.14	63.50	0.37	94.75	0.36
1.08	0.00	32.33	0.14	63.58	0.37	94.83	0.36
1.17	0.00	32.42	0.14	63.67	0.36	94.92	0.35
1.25	0.00	32.50	0.14	63.75	0.36	95.00	0.35
1.33	0.00	32.58	0.14	63.83	0.36	95.08	0.35
1.42	0.00	32.67	0.14	63.92	0.36	95.17	0.35
1.50	0.00	32.75	0.14	64.00	0.36	95.25	0.35
1.58	0.00	32.83	0.14	64.08	0.36	95.33	0.35
1.67	0.00	32.92	0.14	64.17	0.36	95.42	0.35
1.75	0.00	33.00	0.14	64.25	0.35	95.50	0.35
1.83	0.00	33.08	0.14	64.33	0.35	95.58	0.34
1.92	0.00	33.17	0.14	64.42	0.35	95.67	0.34
2.00	0.00	33.25	0.14	64.50	0.35	95.75	0.34
2.08	0.00	33.33	0.14	64.58	0.34	95.83	0.34
2.17	0.00	33.42	0.14	64.67	0.34	95.92	0.34
2.25	0.00	33.50	0.14	64.75	0.34	96.00	0.34
2.33	0.00	33.58	0.14	64.83	0.34	96.08	0.34
2.42	0.00	33.67	0.14	64.92	0.34	96.17	0.34
2.50	0.00	33.75	0.14	65.00	0.34	96.25	0.34
2.58	0.00	33.83	0.14	65.08	0.34	96.33	0.34
2.67	0.00	33.92	0.14	65.17	0.34	96.42	0.34
2.75	0.00	34.00	0.14	65.25	0.34	96.50	0.34
2.83	0.00	34.08	0.14	65.33	0.34	96.58	0.34
2.92	0.00	34.17	0.14	65.42	0.34	96.67	0.34

3.00	0.00	34.25	0.14	65.50	0.34	96.75	0.33	128.00	0.25
3.08	0.00	34.33	0.14	65.58	0.33	96.83	0.33	128.08	0.25
3.17	0.00	34.42	0.14	65.67	0.34	96.92	0.33	128.17	0.25
3.25	0.00	34.50	0.14	65.75	0.33	97.00	0.33	128.25	0.25
3.33	0.00	34.58	0.14	65.83	0.33	97.08	0.33	128.33	0.25
3.42	0.00	34.67	0.14	65.92	0.33	97.17	0.33	128.42	0.25
3.50	0.00	34.75	0.14	66.00	0.33	97.25	0.33	128.50	0.25
3.58	0.00	34.83	0.14	66.08	0.32	97.33	0.33	128.58	0.26
3.67	0.00	34.92	0.14	66.17	0.33	97.42	0.33	128.67	0.26
3.75	0.00	35.00	0.14	66.25	0.33	97.50	0.33	128.75	0.26
3.83	0.00	35.08	0.14	66.33	0.32	97.58	0.33	128.83	0.26
3.92	0.00	35.17	0.14	66.42	0.32	97.67	0.33	128.92	0.26
4.00	0.00	35.25	0.14	66.50	0.33	97.75	0.33	129.00	0.26
4.08	0.00	35.33	0.14	66.58	0.32	97.83	0.33	129.08	0.26
4.17	0.00	35.42	0.14	66.67	0.32	97.92	0.33	129.17	0.26
4.25	0.00	35.50	0.14	66.75	0.32	98.00	0.32	129.25	0.27
4.33	0.00	35.58	0.14	66.83	0.32	98.08	0.32	129.33	0.27
4.42	0.00	35.67	0.14	66.92	0.32	98.17	0.32	129.42	0.27
4.50	0.00	35.75	0.14	67.00	0.32	98.25	0.32	129.50	0.27
4.58	0.00	35.83	0.14	67.08	0.32	98.33	0.32	129.58	0.28
4.67	0.00	35.92	0.14	67.17	0.32	98.42	0.32	129.67	0.28
4.75	0.00	36.00	0.14	67.25	0.32	98.50	0.32	129.75	0.28
4.83	0.00	36.08	0.14	67.33	0.33	98.58	0.32	129.83	0.29
4.92	0.00	36.17	0.14	67.42	0.34	98.67	0.32	129.92	0.29
5.00	0.00	36.25	0.14	67.50	0.34	98.75	0.32	130.00	0.29
5.08	0.00	36.33	0.15	67.58	0.35	98.83	0.32	130.08	0.29
5.17	0.00	36.42	0.15	67.67	0.35	98.92	0.32	130.17	0.29
5.25	0.00	36.50	0.15	67.75	0.36	99.00	0.32	130.25	0.29
5.33	0.00	36.58	0.15	67.83	0.37	99.08	0.32	130.33	0.29
5.42	0.00	36.67	0.15	67.92	0.38	99.17	0.32	130.42	0.29
5.50	0.00	36.75	0.15	68.00	0.40	99.25	0.32	130.50	0.29
5.58	0.00	36.83	0.15	68.08	0.41	99.33	0.32	130.58	0.29
5.67	0.00	36.92	0.15	68.17	0.42	99.42	0.32	130.67	0.29
5.75	0.00	37.00	0.15	68.25	0.43	99.50	0.32	130.75	0.29
5.83	0.00	37.08	0.15	68.33	0.45	99.58	0.31	130.83	0.29
5.92	0.00	37.17	0.15	68.42	0.47	99.67	0.31	130.92	0.29
6.00	0.00	37.25	0.15	68.50	0.4				

11.33 0.00 42.58 0.36 73.83 1.06 105.08 0.24 136.33 0.22
11.42 0.00 42.67 0.36 73.92 1.05 105.17 0.23 136.42 0.22
11.50 0.00 42.75 0.37 74.00 1.03 105.25 0.23 136.50 0.22
11.58 0.00 42.83 0.38 74.08 1.03 105.33 0.23 136.58 0.22
11.67 0.00 42.92 0.39 74.17 1.02 105.42 0.23 136.67 0.21
11.75 0.00 43.00 0.40 74.25 1.00 105.50 0.23 136.75 0.21
11.83 0.00 43.08 0.40 74.33 0.99 105.58 0.23 136.83 0.21
11.92 0.00 43.17 0.42 74.42 0.97 105.67 0.23 136.92 0.21
12.00 0.00 43.25 0.42 74.50 0.96 105.75 0.23 137.00 0.21
12.08 0.00 43.33 0.43 74.58 0.95 105.83 0.23 137.08 0.21
12.17 0.00 43.42 0.44 74.67 0.94 105.92 0.23 137.17 0.21
12.25 0.00 43.50 0.45 74.75 0.92 106.00 0.22 137.25 0.21
12.33 0.00 43.58 0.46 74.83 0.91 106.08 0.22 137.33 0.21
12.42 0.00 43.67 0.47 74.92 0.89 106.17 0.22 137.42 0.21
12.50 0.00 43.75 0.48 75.00 0.88 106.25 0.22 137.50 0.20
12.58 0.00 43.83 0.49 75.08 0.87 106.33 0.22 137.58 0.20
12.67 0.00 43.92 0.50 75.17 0.85 106.42 0.22 137.67 0.20
12.75 0.00 44.00 0.50 75.25 0.84 106.50 0.22 137.75 0.20
12.83 0.00 44.08 0.51 75.33 0.83 106.58 0.22 137.83 0.20
12.92 0.00 44.17 0.51 75.42 0.81 106.67 0.22 137.92 0.20
13.00 0.00 44.25 0.52 75.50 0.80 106.75 0.21 138.00 0.20
13.08 0.00 44.33 0.52 75.58 0.79 106.83 0.21 138.08 0.20
13.17 0.00 44.42 0.53 75.67 0.77 106.92 0.21 138.17 0.20
13.25 0.00 44.50 0.53 75.75 0.77 107.00 0.21 138.25 0.19
13.33 0.00 44.58 0.53 75.83 0.76 107.08 0.21 138.33 0.19
13.42 0.00 44.67 0.54 75.92 0.74 107.17 0.21 138.42 0.19
13.50 0.00 44.75 0.54 76.00 0.74 107.25 0.21 138.50 0.19
13.58 0.00 44.83 0.54 76.08 0.72 107.33 0.21 138.58 0.19
13.67 0.00 44.92 0.55 76.17 0.72 107.42 0.21 138.67 0.19
13.75 0.00 45.00 0.55 76.25 0.71 107.50 0.21 138.75 0.19
13.83 0.00 45.08 0.55 76.33 0.70 107.58 0.21 138.83 0.19
13.92 0.00 45.17 0.55 76.42 0.69 107.67 0.21 138.92 0.19
14.00 0.00 45.25 0.55 76.50 0.68 107.75 0.20 139.00 0.19
14.08 0.00 45.33 0.55 76.58 0.68 107.83 0.20 139.08 0.19
14.17 0.00 45.42 0.55 76.67 0.68 107.92 0.20 139.17 0.18
14.25 0.00 45.50 0.55 76.75 0.66 108.00 0.20 139.25 0.18
14.33 0.00 45.58 0.55 76.83 0.65 108.08 0.20 139.33 0.18
14.42 0.00 45.67 0.55 76.92 0.65 108.17 0.20 139.42 0.18
14.50 0.00 45.75 0.55 77.00 0.64 108.25 0.20 139.50 0.18
14.58 0.00 45.83 0.55 77.08 0.63 108.33 0.20 139.58 0.18
14.67 0.00 45.92 0.55 77.17 0.63 108.42 0.20 139.67 0.18
14.75 0.99 46.00 0.54 77.25 0.63 108.50 0.20 139.75 0.18
14.83 0.99 46.08 0.54 77.33 0.62 108.58 0.20 139.83 0.18
14.92 1.00 46.17 0.54 77.42 0.61 108.67 0.20 139.92 0.18
15.00 1.00 46.25 0.54 77.50 0.60 108.75 0.19 140.00 0.18
15.08 1.01 46.33 0.53 77.58 0.60 108.83 0.19 140.08 0.18
15.17 1.01 46.42 0.53 77.67 0.59 108.92 0.19 140.17 0.18
15.25 1.02 46.50 0.53 77.75 0.59 109.00 0.19 140.25 0.18
15.33 1.03 46.58 0.52 77.83 0.58 109.08 0.19 140.33 0.18
15.42 1.04 46.67 0.52 77.92 0.58 109.17 0.19 140.42 0.17

15.50 1.05 46.75 0.52 78.00 0.58 109.25 0.19 140.50 0.17
15.58 1.06 46.83 0.52 78.08 0.58 109.33 0.19 140.58 0.17
15.67 1.07 46.92 0.51 78.17 0.57 109.42 0.19 140.67 0.17
15.75 1.08 47.00 0.51 78.25 0.56 109.50 0.19 140.75 0.17
15.83 1.08 47.08 0.51 78.33 0.56 109.58 0.19 140.83 0.17
15.92 1.08 47.17 0.51 78.42 0.55 109.67 0.18 140.92 0.17
16.00 1.09 47.25 0.51 78.50 0.55 109.75 0.18 141.00 0.17
16.08 1.09 47.33 0.51 78.58 0.55 109.83 0.18 141.08 0.17
16.17 1.09 47.42 0.51 78.67 0.55 109.92 0.18 141.17 0.17
16.25 1.09 47.50 0.50 78.75 0.54 110.00 0.18 141.25 0.17
16.33 1.09 47.58 0.50 78.83 0.54 110.08 0.18 141.33 0.17
16.42 1.09 47.67 0.50 78.92 0.54 110.17 0.18 141.42 0.17
16.50 1.09 47.75 0.50 79.00 0.54 110.25 0.18 141.50 0.16
16.58 1.10 47.83 0.50 79.08 0.53 110.33 0.18 141.58 0.16
16.67 1.09 47.92 0.50 79.17 0.52 110.42 0.18 141.67 0.16
16.75 1.09 48.00 0.50 79.25 0.52 110.50 0.18 141.75 0.16
16.83 1.08 48.08 0.50 79.33 0.51 110.58 0.18 141.83 0.16
16.92 1.09 48.17 0.49 79.42 0.50 110.67 0.18 141.92 0.16
17.00 1.08 48.25 0.49 79.50 0.50 110.75 0.18 142.00 0.16
17.08 1.07 48.33 0.49 79.58 0.49 110.83 0.18 142.08 0.16
17.17 1.06 48.42 0.49 79.67 0.49 110.92 0.18 142.17 0.16
17.25 1.06 48.50 0.49 79.75 0.48 111.00 0.18 142.25 0.16
17.33 1.05 48.58 0.49 79.83 0.48 111.08 0.18 142.33 0.16
17.42 1.04 48.67 0.48 79.92 0.48 111.17 0.18 142.42 0.16
17.50 1.04 48.75 0.48 80.00 0.47 111.25 0.18 142.50 0.16
17.58 1.03 48.83 0.48 80.08 0.47 111.33 0.18 142.58 0.16
17.67 1.02 48.92 0.48 80.17 0.46 111.42 0.18 142.67 0.16
17.75 1.01 49.00 0.47 80.25 0.46 111.50 0.18 142.75 0.16
17.83 1.00 49.08 0.47 80.33 0.46 111.58 0.18 142.83 0.16
17.92 0.99 49.17 0.47 80.42 0.45 111.67 0.18 142.92 0.16
18.00 0.98 49.25 0.47 80.50 0.45 111.75 0.18 143.00 0.16
18.08 0.97 49.33 0.47 80.58 0.45 111.83 0.17 143.08 0.15
18.17 0.96 49.42 0.46 80.67 0.45 111.92 0.17 143.17 0.15
18.25 0.95 49.50 0.46 80.75 0.44 112.00 0.17 143.25 0.15
18.33 0.93 49.58 0.46 80.83 0.44 112.08 0.17 143.33 0.15
18.42 0.92 49.67 0.46 80.92 0.44 112.17 0.17 143.42 0.15
18.50 0.91 49.75 0.45 81.00 0.44 112.25 0.17 143.50 0.15
18.58 0.89 49.83 0.45 81.08 0.44 112.33 0.17 143.58 0.15
18.67 0.87 49.92 0.45 81.17 0.44 112.42 0.17 143.67 0.15
18.75 0.86 50.00 0.45 81.25 0.44 112.50 0.17 143.75 0.15
18.83 0.84 50.08 0.44 81.33 0.44 112.58 0.17 143.83 0.15
18.92 0.83 50.17 0.44 81.42 0.43 112.67 0.17 143.92 0.15
19.00 0.81 50.25 0.44 81.50 0.44 112.75 0.17 144.00 0.15
19.08 0.79 50.33 0.44 81.58 0.45 112.83 0.17 144.08 0.15
19.17 0.78 50.42 0.44 81.67 0.46 112.92 0.17 144.17 0.15
19.25 0.76 50.50 0.44 81.75 0.45 113.00 0.17 144.25 0.15
19.33 0.74 50.58 0.44 81.83 0.46 113.08 0.17 144.33 0.15
19.42 0.72 50.67 0.44 81.92 0.46 113.17 0.16 144.42 0.15
19.50 0.71 50.75 0.43 82.00 0.46 113.25 0.16 144.50 0.15
19.58 0.69 50.83 0.43 82.08 0.47 113.33 0.16 144.58 0.15

19.67 0.68 50.92 0.43 82.17 0.47 113.42 0.16 144.67 0.15
19.75 0.66 51.00 0.43 82.25 0.48 113.50 0.16 144.75 0.15
19.83 0.65 51.08 0.43 82.33 0.49 113.58 0.16 144.83 0.14
19.92 0.64 51.17 0.43 82.42 0.49 113.67 0.16 144.92 0.14
20.00 0.62 51.25 0.43 82.50 0.49 113.75 0.16 145.00 0.14
20.08 0.61 51.33 0.43 82.58 0.49 113.83 0.16 145.08 0.14
20.17 0.60 51.42 0.43 82.67 0.50 113.92 0.16 145.17 0.14
20.25 0.58 51.50 0.43 82.75 0.50 114.00 0.16 145.25 0.14
20.33 0.58 51.58 0.43 82.83 0.50 114.08 0.16 145.33 0.14
20.42 0.56 51.67 0.43 82.92 0.50 114.17 0.16 145.42 0.14
20.50 0.55 51.75 0.43 83.00 0.50 114.25 0.16 145.50 0.14
20.58 0.54 51.83 0.43 83.08 0.50 114.33 0.16 145.58 0.14
20.67 0.53 51.92 0.43 83.17 0.51 114.42 0.16 145.67 0.14
20.75 0.52 52.00 0.43 83.25 0.51 114.50 0.16 145.75 0.14
20.83 0.51 52.08 0.43 83.33 0.51 114.58 0.16 145.83 0.14
20.92 0.50 52.17 0.43 83.42 0.51 114.67 0.16 145.92 0.14
21.00 0.49 52.25 0.43 83.50 0.52 114.75 0.16 146.00 0.14
21.08 0.49 52.33 0.43 83.58 0.52 114.83 0.16 146.08 0.14
21.17 0.48 52.42 0.43 83.67 0.53 114.92 0.16 146.17 0.14
21.25 0.47 52.50 0.43 83.75 0.53 115.00 0.16 146.25 0.14
21.33 0.47 52.58 0.43 83.83 0.53 115.08 0.16 146.33 0.14
21.42 0.46 52.67 0.43 83.92 0.55 115.17 0.16 146.42 0.14
21.50 0.45 52.75 0.43 84.00 0.56 115.25 0.16 146.50 0.14
21.58 0.45 52.83 0.43 84.08 0.57 115.33 0.16 146.58 0.14
21.67 0.44 52.92 0.44 84.17 0.58 115.42 0.16 146.67 0.14
21.75 0.43 53.00 0.44 84.25 0.60 115.50 0.16 146.75 0.14
21.83 0.43 53.08 0.44 84.33 0.62 115.58 0.16 146.83 0.14
21.92 0.42 53.17 0.44 84.42 0.64 115.67 0.16 146.92 0.13
22.00 0.42 53.25 0.44 84.50 0.66 115.75 0.16 147.00 0.13
22.08 0.41 53.33 0.45 84.58 0.69 115.83 0.16 147.08 0.13
22.17 0.41 53.42 0.45 84.67 0.72 115.92 0.16 147.17 0.13
22.25 0.40 53.50 0.45 84.75 0.74 116.00 0.16 147.25 0.13
22.33 0.40 53.58 0.45 84.83 0.77 116.08 0.15 147.33 0.13
22.42 0.39 53.67 0.46 84.92 0.79 116.17 0.15 147.42 0.13
22.50 0.39 53.75 0.46 85.00 0.81 116.25 0.16 147.50 0.13
22.58 0.38 53.83 0.46 85.08 0.82 116.33 0.16 147.58 0.13
22.67 0.38 53.92 0.46 85.17 0.84 116.42 0.16 147.67 0.13
22.75 0.37 54.00 0.47 85.25 0.85 116.50 0.16 147.75 0.13
22.83 0.37 54.08 0.47 85.33 0.85 116.58 0.16 147.83 0.13
22.92 0.36 54.17 0.47 85.42 0.86 116.67 0.16 147.92 0.13
23.00 0.36 54.25 0.48 85.50 0.87 116.75 0.16 148.00 0.13
23.08 0.36 54.33 0.48 85.58 0.86 116.83 0.16 148.08 0.13
23.17 0.35 54.42 0.49 85.67 0.87 116.92 0.16 148.17 0.13
23.25 0.35 54.50 0.49 85.75 0.86 117.00 0.16 148.25 0.13
23.33 0.34 54.58 0.50 85.83 0.85 117.08 0.16 148.33 0.13
23.42 0.34 54.67 0.50 85.92 0.85 117.17 0.16 148.42 0.13
23.50 0.34 54.75 0.51 86.00 0.84 117.25 0.16 148.50 0.13
23.58 0.33 54.83 0.52 86.08 0.83 117.33 0.16 148.58 0.13
23.67 0.33 54.92 0.53 86.17 0.82 117.42 0.16 148.67 0.13
23.75 0.32 55.00 0.53 86.25 0.81 117.50 0.16 148.75 0.13

23.83 0.32 55.08 0.54 86.33 0.81 117.58 0.16 148.83 0.13
23.92 0.32 55.17 0.55 86.42 0.79 117.67 0.16 148.92 0.13
24.00 0.31 55.25 0.55 86.50 0.78 117.75 0.16 149.00 0.13
24.08 0.31 55.33 0.55 86.58 0.77 117.83 0.16 149.08 0.13
24.17 0.30 55.42 0.56 86.67 0.76 117.92 0.16 149.17 0.13
24.25 0.30 55.50 0.56 86.75 0.74 118.00 0.16 149.25 0.12
24.33 0.30 55.58 0.57 86.83 0.74 118.08 0.16 149.33 0.12
24.42 0.30 55.67 0.57 86.92 0.73 118.17 0.16 149.42 0.12
24.50 0.29 55.75 0.58 87.00 0.71 118.25 0.16 149.50 0.12
24.58 0.29 55.83 0.58 87.08 0.71 118.33 0.16 149.58 0.12
24.67 0.29 55.92 0.58 87.17 0.70 118.42 0.16 149.67 0.12
24.75 0.28 56.00 0.58 87.25 0.68 118.50 0.16 149.75 0.12
24.83 0.28 56.08 0.58 87.33 0.68 118.58 0.15 149.83 0.12
24.92 0.28 56.17 0.58 87.42 0.66 118.67 0.15 149.92 0.12
25.00 0.27 56.25 0.58 87.50 0.66 118.75 0.15 150.00 0.12
25.08 0.27 56.33 0.58 87.58 0.65 118.83 0.15 150.08 0.12
25.17 0.27 56.42 0.58 87.67 0.64 118.92 0.15 150.17 0.12
25.25 0.27 56.50 0.59 87.75 0.63 119.00 0.15 150.25 0.12
25.33 0.26 56.58 0.59 87.83 0.62 119.08 0.15 150.33 0.12
25.42 0.26 56.67 0.59 87.92 0.62 119.17 0.15 150.42 0.12
25.50 0.26 56.75 0.59 88.00 0.61 119.25 0.15 150.50 0.12
25.58 0.25 56.83 0.59 88.08 0.60 119.33 0.15 150.58 0.12
25.67 0.25 56.92 0.59 88.17 0.59 119.42 0.15 150.67 0.12
25.75 0.25 57.00 0.59 88.25 0.58 119.50 0.15 150.75 0.12
25.83 0.25 57.08 0.59 88.33 0.58 119.58 0.15 150.83 0.12
25.92 0.25 57.17 0.59 88.42 0.57 119.67 0.15 150.92 0.12
26.00 0.24 57.25 0.59 88.50 0.57 119.75 0.15 151.00 0.12
26.08 0.24 57.33 0.59 88.58 0.56 119.83 0.16 151.08 0.12
26.17 0.24 57.42 0.59 88.67 0.55 119.92 0.16 151.17 0.12
26.25 0.24 57.50 0.59 88.75 0.55 120.00 0.16 151.25 0.12
26.33 0.23 57.58 0.58 88.83 0.54 120.08 0.16 151.33 0.12
26.42 0.23 57.67 0.58 88.92 0.53 120.17 0.16 151.42 0.12
26.50 0.23 57.75 0.58 89.00 0.53 120.25 0.16 151.50 0.12
26.58 0.23 57.83 0.57 89.08 0.52 120.33 0.16 151.58 0.12
26.67 0.23 57.92 0.57 89.17 0.51 120.42 0.16 151.67 0.12
26.75 0.22 58.00 0.57 89.25 0.51 120.50 0.16 151.75 0.12
26.83 0.22 58.08 0.57 89.33 0.50 120.58 0.16 151.83 0.12
26.92 0.22 58.17 0.56 89.42 0.50 120.67 0.16 151.92 0.12
27.00 0.22 58.25 0.56 89.50 0.49 120.75 0.16 152.00 0.12
27.08 0.22 58.33 0.56 89.58 0.48 120.83 0.16 152.08 0.12
27.17 0.21 58.42 0.55 89.67 0.48 120.92 0.16 152.17 0.12
27.25 0.21 58.50 0.55 89.75 0.47 121.00 0.16 152.25 0.12
27.33 0.21 58.58 0.54 89.83 0.47 121.08 0.16 152.33 0.11
27.42 0.21 58.67 0.54 89.92 0.47 121.17 0.16 152.42 0.11
27.50 0.21 58.75 0.53 90.00 0.47 121.25 0.16 152.50 0.11
27.58 0.21 58.83 0.53 90.08 0.46 121.33 0.16 152.58 0.11
27.67 0.20 58.92 0.52 90.17 0.46 121.42 0.16 152.67 0.11
27.75 0.20 59.00 0.52 90.25 0.45 121.50 0.17 152.75 0.11
27.83 0.20 59.08 0.52 90.33 0.45 121.58 0.17 152.83 0.11
27.92 0.20 59.17 0.51 90.42 0.44 121.67 0.17 152.92 0.11

28.00	0.19	59.25	0.51	90.50	0.44	121.75	0.17	153.00	0.11
28.08	0.19	59.33	0.50	90.58	0.44	121.83	0.17	153.08	0.11
28.17	0.19	59.42	0.50	90.67	0.43	121.92	0.17	153.17	0.11
28.25	0.19	59.50	0.49	90.75	0.43	122.00	0.17	153.25	0.11
28.33	0.19	59.58	0.49	90.83	0.43	122.08	0.17	153.33	0.11
28.42	0.19	59.67	0.49	90.92	0.43	122.17	0.17	153.42	0.11
28.50	0.19	59.75	0.48	91.00	0.42	122.25	0.18	153.50	0.11
28.58	0.18	59.83	0.48	91.08	0.42	122.33	0.18	153.58	0.11
28.67	0.18	59.92	0.47	91.17	0.42	122.42	0.18	153.67	0.11
28.75	0.18	60.00	0.47	91.25	0.42	122.50	0.18	153.75	0.11
28.83	0.18	60.08	0.47	91.33	0.41	122.58	0.18	153.83	0.11
28.92	0.18	60.17	0.46	91.42	0.41	122.67	0.18	153.92	0.11
29.00	0.18	60.25	0.46	91.50	0.41	122.75	0.18	154.00	0.11
29.08	0.18	60.33	0.45	91.58	0.41	122.83	0.18	154.08	0.11
29.17	0.18	60.42	0.45	91.67	0.41	122.92	0.18	154.17	0.11
29.25	0.17	60.50	0.44	91.75	0.41	123.00	0.18	154.25	0.11
29.33	0.17	60.58	0.44	91.83	0.40	123.08	0.18	154.33	0.11
29.42	0.17	60.67	0.44	91.92	0.40	123.17	0.18	154.42	0.11
29.50	0.17	60.75	0.43	92.00	0.40	123.25	0.18	154.50	0.11
29.58	0.17	60.83	0.43	92.08	0.40	123.33	0.18	154.58	0.11
29.67	0.17	60.92	0.42	92.17	0.40	123.42	0.18	154.67	0.11
29.75	0.17	61.00	0.42	92.25	0.39	123.50	0.18	154.75	0.11
29.83	0.17	61.08	0.42	92.33	0.39	123.58	0.18	154.83	0.11
29.92	0.16	61.17	0.42	92.42	0.39	123.67	0.18	154.92	0.11
30.00	0.16	61.25	0.41	92.50	0.39	123.75	0.18	155.00	0.11
30.08	0.16	61.33	0.41	92.58	0.38	123.83	0.18	155.08	0.11
30.17	0.16	61.42	0.40	92.67	0.38	123.92	0.18	155.17	0.11
30.25	0.16	61.50	0.40	92.75	0.38	124.00	0.18	155.25	0.11
30.33	0.16	61.58	0.40	92.83	0.38	124.08	0.18	155.33	0.11
30.42	0.16	61.67	0.40	92.92	0.38	124.17	0.18	155.42	0.11
30.50	0.16	61.75	0.39	93.00	0.37	124.25	0.18	155.50	0.11
30.58	0.16	61.83	0.39	93.08	0.37	124.33	0.19	155.58	0.11
30.67	0.16	61.92	0.39	93.17	0.37	124.42	0.19	155.67	0.11
30.75	0.16	62.00	0.38	93.25	0.37	124.50	0.19	155.75	0.11
30.83	0.15	62.08	0.38	93.33	0.37	124.58	0.19	155.83	0.10
30.92	0.15	62.17	0.38	93.42	0.37	124.67	0.20	155.92	0.11
31.00	0.15	62.25	0.38	93.50	0.37	124.75	0.20	156.00	0.10
31.08	0.15	62.33	0.39	93.58	0.37	124.83	0.20		
31.17	0.15	62.42	0.39	93.67	0.37	124.92	0.20		

HEC-RAS Plan: WC56 - BSS1 with Ponds River: wc56centreline Reach: wc5

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	2388.964	100-Year	7.66	92.94	93.92	93.75	93.96	0.002531	1.11	13.83	38.48	0.42
wc5	2388.964	5-Year	3.23	92.94	93.62	93.50	93.69	0.006527	1.21	3.44	27.10	0.62
wc5	2388.964	2-Year	1.81	92.94	93.48	93.36	93.54	0.006635	1.05	1.73	5.59	0.60
wc5	2290	100-Year	7.66	92.11	93.55		93.63	0.002459	1.20	6.38	7.50	0.42
wc5	2290	5-Year	3.23	92.11	92.84		92.95	0.008000	1.50	2.15	4.41	0.69
wc5	2290	2-Year	1.81	92.11	92.62		92.72	0.010579	1.42	1.27	3.52	0.76
wc5	2256	100-Year	7.66	91.90	93.39	92.77	93.54	0.002125	1.72	4.46	6.37	0.45
wc5	2256	5-Year	3.23	91.90	92.69	92.39	92.78	0.003193	1.37	2.35	3.71	0.50
wc5	2256	2-Year	1.81	91.90	92.49	92.24	92.55	0.002573	1.02	1.77	3.54	0.42
wc5	2240.61		Culvert									
wc5	2221	100-Year	7.66	91.58	92.65		92.94	0.006338	2.38	3.22	5.08	0.73
wc5	2221	5-Year	3.23	91.58	92.52		92.59	0.001764	1.15	2.81	3.83	0.38
wc5	2221	2-Year	1.81	91.58	92.41		92.44	0.000823	0.73	2.50	3.74	0.25
wc5	2198	100-Year	7.66	91.82	92.57	92.57	92.72	0.010877	2.12	7.53	24.37	0.86
wc5	2198	5-Year	3.23	91.82	92.41	92.41	92.51	0.009011	1.57	3.69	22.28	0.74
wc5	2198	2-Year	1.81	91.82	92.27	92.25	92.38	0.012475	1.46	1.45	10.30	0.83
wc5	2150	100-Year	7.66	91.45	92.18	92.16	92.31	0.009069	1.96	8.33	26.44	0.79
wc5	2150	5-Year	3.23	91.45	92.00	92.00	92.10	0.008810	1.53	3.83	22.76	0.74
wc5	2150	2-Year	1.81	91.45	91.91	91.86	91.98	0.008045	1.25	2.00	15.18	0.68
wc5	2068.437	100-Year	7.66	90.60	91.30	91.30	91.45	0.010737	2.14	7.68	24.68	0.87
wc5	2068.437	5-Year	3.23	90.60	91.10	91.10	91.23	0.011420	1.72	3.29	18.07	0.84
wc5	2068.437	2-Year	1.81	90.60	90.99	90.98	91.09	0.013325	1.50	1.64	10.18	0.86
wc5	2044.707	100-Year	7.66	90.00	90.74	90.71	90.86	0.007685	1.76	7.91	24.66	0.73
wc5	2044.707	5-Year	3.23	90.00	90.56	90.50	90.64	0.007194	1.33	3.57	20.29	0.66
wc5	2044.707	2-Year	1.81	90.00	90.44		90.51	0.008162	1.13	1.77	10.38	0.67
wc5	1986.134	100-Year	7.66	89.80	90.48	90.48	90.63	0.010496	2.08	7.57	24.32	0.85
wc5	1986.134	5-Year	3.23	89.80	90.28	90.28	90.40	0.011695	1.68	3.18	17.22	0.84
wc5	1986.134	2-Year	1.81	89.80	90.19	90.16	90.27	0.009840	1.31	1.90	11.84	0.74
wc5	1901.030	100-Year	7.66	88.80	89.64		89.70	0.003205	1.37	11.84	25.74	0.49
wc5	1901.030	5-Year	3.23	88.80	89.28	89.28	89.40	0.010740	1.65	3.18	18.46	0.81
wc5	1901.030	2-Year	1.81	88.80	89.14	89.14	89.26	0.015827	1.54	1.34	8.33	0.92
wc5	1874.583	100-Year	7.66	88.20	89.09	89.09	89.49	0.013134	2.89	2.93	26.48	1.00
wc5	1874.583	5-Year	3.23	88.20	88.74	88.74	88.96	0.015233	2.16	1.63	20.33	0.99
wc5	1874.583	2-Year	1.81	88.20	88.59	88.59	88.74	0.016775	1.78	1.09	12.32	0.97
wc5	1853.265		Culvert									
wc5	1801.453	100-Year	7.66	87.80	88.77	88.77	89.20	0.012878	3.04	2.98	26.49	1.01
wc5	1801.453	5-Year	3.23	87.80	88.46	88.39	88.65	0.009238	1.97	1.92	23.92	0.80
wc5	1801.453	2-Year	1.81	87.80	88.33	88.23	88.43	0.006698	1.43	1.47	19.07	0.66
wc5	1693.967	100-Year	7.66	87.47	88.30		88.37	0.004744	1.51	10.62	25.44	0.58
wc5	1693.967	5-Year	3.23	87.47	88.08		88.14	0.005070	1.21	5.25	23.40	0.56
wc5	1693.967	2-Year	1.81	87.47	87.99		88.03	0.004717	1.01	3.11	21.73	0.52
wc5	1602.883	100-Year	7.66	87.00	87.71		87.78	0.005326	1.58	10.33	25.38	0.62
wc5	1602.883	5-Year	3.23	87.00	87.51		87.56	0.004767	1.19	5.53	23.08	0.55
wc5	1602.883	2-Year	1.81	87.00	87.40		87.45	0.005320	1.05	3.12	21.04	0.56
wc5	1537.467	100-Year	7.66	86.60	87.44		87.50	0.003616	1.43	11.76	25.79	0.52
wc5	1537.467	5-Year	3.23	86.60	87.15		87.22	0.005968	1.34	4.77	21.51	0.62
wc5	1537.467	2-Year	1.81	86.60	87.05		87.10	0.005569	1.10	2.79	16.05	0.57
wc5	1471.795	100-Year	7.66	86.20	87.39		87.40	0.000610	0.71	21.65	31.92	0.22
wc5	1471.795	5-Year	3.23	86.20	86.78		86.85	0.005318	1.17	4.38	24.29	0.57
wc5	1471.795	2-Year	1.81	86.20	86.67		86.72	0.005764	0.99	2.19	14.30	0.57
wc5	1439.675	100-Year	7.66	86.00	87.38		87.39	0.000362	0.63	27.35	33.37	0.18
wc5	1439.675	5-Year	3.23	86.00	86.64		86.69	0.003827	1.15	5.27	25.51	0.50
wc5	1439.675	2-Year	1.81	86.00	86.55		86.59	0.002678	0.86	3.26	20.77	0.40
wc5	1320.692	100-Year	11.37	85.60	87.35		87.36	0.000320	0.70	35.97	32.60	0.17
wc5	1320.692	5-Year	4.82	85.60	86.49		86.52	0.001436	0.89	11.11	25.61	0.33
wc5	1320.692	2-Year	2.88	85.60	86.20	86.11	86.27	0.005090	1.22	4.02	22.73	0.57
wc5	1316.508	100-Year	11.37	85.26	87.16	86.44	87.32	0.002197	1.82	6.25	15.76	0.44

HEC-RAS Plan: WC56 - BSS1 with Ponds River: wc56centreline Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	1316.508	5-Year	4.82	85.26	86.34	86.00	86.45	0.003334	1.46	3.30	5.37	0.49
wc5	1316.508	2-Year	2.88	85.26	86.06	85.83	86.14	0.004178	1.27	2.26	4.35	0.52
wc5	1307.90		Culvert									
wc5	1291.617	100-Year	11.37	85.21	86.40	86.40	86.93	0.012933	3.23	3.52	6.08	1.01
wc5	1291.617	5-Year	4.82	85.21	86.06		86.27	0.008505	2.02	2.38	4.97	0.76
wc5	1291.617	2-Year	2.88	85.21	85.88		86.01	0.008133	1.62	1.77	4.23	0.71
wc5	1288.054	100-Year	11.37	85.00	86.29		86.54	0.007489	2.23	5.14	5.73	0.74
wc5	1288.054	5-Year	4.82	85.00	85.90		86.04	0.007328	1.62	2.98	5.11	0.68
wc5	1288.054	2-Year	2.88	85.00	85.70		85.80	0.007294	1.41	2.04	4.31	0.65
wc5	1225.493	100-Year	11.37	84.72	86.00		86.26	0.007627	2.23	5.22	6.64	0.74
wc5	1225.493	5-Year	4.82	84.72	85.61		85.75	0.007596	1.64	2.94	5.08	0.69
wc5	1225.493	2-Year	2.88	84.72	85.42		85.52	0.007602	1.43	2.01	4.28	0.67
wc5	1157.883	100-Year	11.37	84.21	85.50		85.74	0.007450	2.21	5.33	7.23	0.74
wc5	1157.883	5-Year	4.82	84.21	85.11		85.24	0.007391	1.62	2.97	5.10	0.68
wc5	1157.883	2-Year	2.88	84.21	84.91		85.01	0.007413	1.42	2.03	4.30	0.66
wc5	1131.031	100-Year	11.37	84.01	85.31		85.55	0.006890	2.16	5.59	8.21	0.71
wc5	1131.031	5-Year	4.82	84.01	84.92		85.05	0.007174	1.61	3.00	5.12	0.67
wc5	1131.031	2-Year	2.88	84.01	84.72		84.82	0.007111	1.40	2.06	4.33	0.65
wc5	1112.568	100-Year	11.37	83.88	85.17	85.01	85.42	0.007381	2.21	5.35	7.28	0.73
wc5	1112.568	5-Year	4.82	83.88	84.77	84.62	84.91	0.007574	1.64	2.94	5.08	0.69
wc5	1112.568	2-Year	2.88	83.88	84.58	84.44	84.68	0.007522	1.43	2.02	4.29	0.66
wc5	1071.480	100-Year	11.37	83.57	84.86	84.70	85.11	0.007356	2.21	5.25	7.82	0.73
wc5	1071.480	5-Year	4.82	83.57	84.47		84.60	0.007479	1.63	2.96	5.09	0.68
wc5	1071.480	2-Year	2.88	83.57	84.27		84.37	0.007572	1.43	2.01	4.28	0.67
wc5	1034.499	100-Year	11.37	83.29	84.61	84.41	84.85	0.006726	2.15	5.35	6.08	0.70
wc5	1034.499	5-Year	4.82	83.29	84.20	84.03	84.33	0.007159	1.60	3.00	5.13	0.67
wc5	1034.499	2-Year	2.88	83.29	84.02	83.85	84.11	0.006330	1.34	2.15	4.41	0.61
wc5	1013.774	100-Year	11.37	83.14	84.27	84.27	84.64	0.013861	2.68	4.31	6.51	0.97
wc5	1013.774	5-Year	4.82	83.14	83.94	83.88	84.13	0.011747	1.93	2.50	4.72	0.84
wc5	1013.774	2-Year	2.88	83.14	83.91	83.70	83.99	0.004998	1.23	2.35	4.58	0.55
wc5	951.8970	100-Year	15.28	82.62	84.49	83.84	84.49	0.000084	0.31	129.26	334.27	0.08
wc5	951.8970	5-Year	6.65	82.62	83.77	83.62	83.82	0.002703	1.13	9.68	38.01	0.42
wc5	951.8970	2-Year	4.12	82.62	83.48	83.32	83.60	0.007158	1.56	2.85	10.27	0.66
wc5	942.8887	100-Year	15.28	82.59	83.90	84.17	84.44	0.013022	3.25	4.71	39.95	1.00
wc5	942.8887	5-Year	6.65	82.59	83.53	83.45	83.77	0.009925	2.14	3.10	5.28	0.82
wc5	942.8887	2-Year	4.12	82.59	83.44	83.27	83.56	0.006053	1.53	2.70	4.91	0.62
wc5	937.1887		Culvert									
wc5	931	100-Year	15.28	82.47	83.79	83.79	84.33	0.013046	3.25	4.71	87.11	1.00
wc5	931	5-Year	6.65	82.47	83.48	83.33	83.68	0.007662	1.98	3.35	5.96	0.73
wc5	931	2-Year	4.12	82.47	83.43	83.14	83.51	0.003785	1.33	3.11	5.32	0.50
wc5	918.3739	100-Year	15.28	82.41	83.65	83.57	83.65	0.000042	0.14	125.54	174.51	0.05
wc5	918.3739	5-Year	6.65	82.41	83.58	83.37	83.58	0.000010	0.07	113.94	173.90	0.03
wc5	918.3739	2-Year	4.12	82.41	83.29	83.20	83.42	0.010119	1.64	2.51	5.41	0.77
wc5	815.3577	100-Year	15.28	81.85	83.44	83.19	83.62	0.006433	1.87	8.16	10.35	0.67
wc5	815.3577	5-Year	6.65	81.85	83.42	82.72	83.46	0.001281	0.83	8.00	10.23	0.30
wc5	815.3577	2-Year	4.12	81.85	82.98	82.53	83.02	0.002241	0.97	4.27	6.55	0.38
wc5	680.8133	100-Year	18.86	81.64	83.56	83.08	83.56	0.000002	0.04	481.43	277.15	0.01
wc5	680.8133	5-Year	8.07	81.64	83.45	82.60	83.45	0.000000	0.02	449.32	277.07	0.01
wc5	680.8133	2-Year	4.97	81.64	82.91	82.39	82.96	0.001519	0.99	5.09	6.10	0.33
wc5	678.6898	100-Year	18.86	81.55	83.56	82.98	83.56	0.000001	0.04	549.85	276.53	0.01
wc5	678.6898	5-Year	8.07	81.55	83.45	82.51	83.45	0.000000	0.02	517.82	276.51	0.00
wc5	678.6898	2-Year	4.97	81.55	82.90	82.30	82.94	0.001154	0.91	5.54	6.09	0.29
wc5	665	100-Year	18.86	81.40	83.56	82.79	83.56	0.000024	0.18	217.00	388.44	0.05
wc5	665	5-Year	8.07	81.40	83.45	82.44	83.45	0.000008	0.10	172.23	388.44	0.03
wc5	665	2-Year	4.97	81.40	82.90	82.28	82.90	0.000130	0.28	37.12	145.54	0.10
wc5	660	100-Year	18.86	81.32	83.54	83.51	83.56	0.004041	0.94	45.24	348.74	0.47
wc5	660	5-Year	8.07	81.32	82.95	82.74	83.40	0.007638	2.98	2.71	7.29	0.80

HEC-RAS Plan: WC56 - BSS1 with Ponds River: wc56centreline Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	660	2-Year	4.97	81.32	82.41	82.41	82.85	0.014107	2.95	1.69	5.07	1.00
wc5	655		Culvert									
wc5	651.8919	100-Year	18.86	80.93	83.47	83.47	83.50	0.002640	1.36	57.70	496.40	0.44
wc5	651.8919	5-Year	8.07	80.93	82.15	82.15	82.75	0.011674	3.43	2.35	34.92	1.00
wc5	651.8919	2-Year	4.97	80.93	81.81	81.81	82.25	0.013066	2.93	1.70	5.04	1.00
wc5	648.3854	100-Year	18.86	80.78	82.48	81.93	82.48	0.000002	0.04	613.18	479.94	0.01
wc5	648.3854	5-Year	8.07	80.78	81.74	81.74	82.05	0.015743	2.46	3.29	5.34	1.00
wc5	648.3854	2-Year	4.97	80.78	81.53	81.53	81.78	0.016719	2.21	2.25	4.50	1.00
wc5	553.6066	100-Year	18.86	80.14	82.48	81.43	82.48	0.000002	0.05	591.15	479.06	0.01
wc5	553.6066	5-Year	8.07	80.14	81.66	81.06	81.67	0.000642	0.59	22.46	117.10	0.22
wc5	553.6066	2-Year	4.97	80.14	81.25	80.90	81.29	0.002246	0.87	5.69	10.69	0.38
wc5	521.5115	100-Year	18.86	80.04	82.48	81.54	82.48	0.000002	0.07	510.47	342.78	0.02
wc5	521.5115	5-Year	8.07	80.04	81.61	81.00	81.66	0.001142	1.04	12.60	38.90	0.30
wc5	521.5115	2-Year	4.97	80.04	81.19	80.79	81.25	0.002495	1.15	4.46	7.60	0.41
wc5	518.7136	100-Year	20.10	79.98	82.03	81.59	82.44	0.004746	2.84	7.07	344.38	0.67
wc5	518.7136	5-Year	9.73	79.98	81.40	81.04	81.62	0.004377	2.08	4.69	14.16	0.60
wc5	518.7136	2-Year	6.06	79.98	81.04	80.80	81.21	0.005388	1.83	3.31	6.11	0.63
wc5	503.04		Culvert									
wc5	487.5449	100-Year	20.10	79.68	81.21	81.21	81.92	0.011251	3.73	5.39	33.36	1.00
wc5	487.5449	5-Year	9.73	79.68	80.67	80.67	81.10	0.013114	2.92	3.33	11.92	1.00
wc5	487.5449	2-Year	6.06	79.68	80.55	80.43	80.77	0.008436	2.12	2.86	10.60	0.78
wc5	484.1846	100-Year	20.10	79.63	81.01	80.84	81.07	0.002413	1.40	26.88	73.41	0.44
wc5	484.1846	5-Year	9.73	79.63	80.83	80.60	80.87	0.001676	1.03	16.03	52.83	0.35
wc5	484.1846	2-Year	6.06	79.63	80.58	80.35	80.66	0.004001	1.28	5.39	24.31	0.52
wc5	381.2556	100-Year	20.10	79.11	80.81	80.71	80.88	0.002223	1.55	29.47	76.60	0.43
wc5	381.2556	5-Year	9.73	79.11	80.53	80.16	80.67	0.003556	1.67	5.88	6.10	0.52
wc5	381.2556	2-Year	6.06	79.11	80.26	79.94	80.36	0.003704	1.40	4.33	5.56	0.50
wc5	359.8282	100-Year	20.10	78.85	80.60	80.60	80.75	0.004766	2.07	21.00	78.39	0.59
wc5	359.8282	5-Year	9.73	78.85	80.17	80.03	80.44	0.009705	2.27	4.29	5.15	0.79
wc5	359.8282	2-Year	6.06	78.85	79.98	79.77	80.15	0.007246	1.80	3.36	4.58	0.67
wc5	304.0528	100-Year	20.10	78.22	80.02	80.02	80.15	0.003720	1.94	22.42	97.81	0.55
wc5	304.0528	5-Year	9.73	78.22	79.46	79.46	79.72	0.011721	2.34	4.79	10.48	0.89
wc5	304.0528	2-Year	6.06	78.22	79.28	79.28	79.50	0.013243	2.09	3.07	8.82	0.90
wc5	250	100-Year	20.10	77.55	79.81		79.88	0.001256	1.19	19.47	37.55	0.33
wc5	250	5-Year	9.73	77.55	78.52	78.52	78.82	0.015553	2.43	4.00	6.77	1.01
wc5	250	2-Year	6.06	77.55	78.33	78.33	78.57	0.016678	2.17	2.79	5.94	1.01
wc5	230	100-Year	20.10	76.75	79.76	78.22	79.86	0.000703	1.44	13.98	116.14	0.28
wc5	230	5-Year	9.73	76.75	78.26	77.78	78.39	0.002463	1.57	6.21	11.51	0.46
wc5	230	2-Year	6.06	76.75	77.87	77.58	77.98	0.003578	1.45	4.18	9.32	0.52
wc5	215		Culvert									
wc5	200	100-Year	20.10	76.48	78.72		78.92	0.002178	2.02	9.96	15.13	0.47
wc5	200	5-Year	9.73	76.48	78.08		78.19	0.001966	1.46	6.65	10.66	0.41
wc5	200	2-Year	6.06	76.48	77.76		77.83	0.001985	1.21	4.99	8.65	0.40
wc5	170	100-Year	20.10	76.48	78.80	77.66	78.83	0.000437	0.91	26.95	18.96	0.21
wc5	170	5-Year	9.73	76.48	78.11	77.36	78.14	0.000552	0.76	14.73	16.84	0.22
wc5	170	2-Year	6.06	76.48	77.78	77.20	77.80	0.000709	0.69	9.16	12.56	0.23



HEC-RAS Plan: 5&6 BSS1-Ultimate River: wc56centrelines Reach: wc5

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	2388.964	100-Year	13.58	92.94	94.28	93.88	94.31	0.001156	0.99	28.77	42.43	0.31
wc5	2388.964	5-Year	5.46	92.94	93.77	93.68	93.82	0.004195	1.21	8.21	34.25	0.52
wc5	2388.964	2-Year	3.14	92.94	93.61	93.49	93.68	0.006626	1.21	3.27	26.51	0.62
wc5	2290	100-Year	13.58	92.11	93.98		94.07	0.002117	1.34	10.93	16.56	0.41
wc5	2290	5-Year	5.46	92.11	93.14		93.26	0.005279	1.48	3.69	5.65	0.58
wc5	2290	2-Year	3.14	92.11	92.82		92.94	0.008111	1.50	2.09	4.36	0.69
wc5	2256	100-Year	13.58	91.90	93.59	93.18	93.92	0.008121	2.58	6.12	14.17	0.72
wc5	2256	5-Year	5.46	91.90	92.96	92.60	93.11	0.003390	1.72	3.17	4.07	0.54
wc5	2256	2-Year	3.14	91.90	92.68	92.38	92.77	0.003166	1.35	2.32	3.70	0.49
wc5	2240.61		Culvert									
wc5	2221	100-Year	13.58	91.58	92.86	92.86	93.50	0.011180	3.55	3.82	6.04	1.00
wc5	2221	5-Year	5.46	91.58	92.59		92.76	0.003904	1.80	3.03	4.08	0.57
wc5	2221	2-Year	3.14	91.58	92.51		92.58	0.001696	1.12	2.80	3.83	0.37
wc5	2198	100-Year	13.58	91.82	92.72	92.72	92.92	0.012337	2.60	11.20	25.59	0.95
wc5	2198	5-Year	5.46	91.82	92.50	92.50	92.63	0.009604	1.85	5.96	23.72	0.79
wc5	2198	2-Year	3.14	91.82	92.40	92.40	92.51	0.008910	1.55	3.61	22.20	0.74
wc5	2150	100-Year	13.58	91.45	92.37	92.30	92.51	0.008218	2.22	13.46	28.38	0.79
wc5	2150	5-Year	5.46	91.45	92.09	92.09	92.22	0.010180	1.86	5.94	24.72	0.82
wc5	2150	2-Year	3.14	91.45	92.00	91.99	92.10	0.008728	1.52	3.74	22.62	0.73
wc5	2068.437	100-Year	13.58	90.60	91.45	91.45	91.65	0.012055	2.62	11.43	25.93	0.95
wc5	2068.437	5-Year	5.46	90.60	91.23	91.23	91.36	0.009620	1.88	6.04	23.83	0.81
wc5	2068.437	2-Year	3.14	90.60	91.10	91.10	91.22	0.011578	1.71	3.17	17.61	0.84
wc5	2044.707	100-Year	13.58	90.00	90.93	90.85	91.07	0.007383	2.06	12.58	26.16	0.75
wc5	2044.707	5-Year	5.46	90.00	90.66	90.63	90.77	0.007845	1.60	5.84	23.84	0.72
wc5	2044.707	2-Year	3.14	90.00	90.55	90.49	90.63	0.007134	1.31	3.48	19.94	0.66
wc5	1986.134	100-Year	13.58	89.80	90.63	90.63	90.83	0.012032	2.57	11.20	25.59	0.95
wc5	1986.134	5-Year	5.46	89.80	90.41	90.41	90.54	0.009963	1.86	5.81	23.51	0.81
wc5	1986.134	2-Year	3.14	89.80	90.27	90.27	90.40	0.011817	1.68	3.08	16.86	0.84
wc5	1901.030	100-Year	13.58	88.80	90.34		90.36	0.000668	0.95	31.63	31.30	0.25
wc5	1901.030	5-Year	5.46	88.80	89.45		89.54	0.006118	1.57	7.01	23.91	0.65
wc5	1901.030	2-Year	3.14	88.80	89.27	89.27	89.39	0.010841	1.65	3.07	18.13	0.81
wc5	1874.583	100-Year	13.58	88.20	90.03	89.47	90.30	0.003308	2.38	6.35	34.01	0.57
wc5	1874.583	5-Year	5.46	88.20	88.93	88.93	89.25	0.013849	2.57	2.34	24.86	1.00
wc5	1874.583	2-Year	3.14	88.20	88.73	88.73	88.95	0.015179	2.13	1.61	19.90	0.98
wc5	1853.265		Culvert									
wc5	1801.453	100-Year	13.58	87.80	89.17	89.17	89.79	0.011787	3.70	4.37	29.69	1.03
wc5	1801.453	5-Year	5.46	87.80	88.63	88.59	88.94	0.011524	2.58	2.50	25.37	0.93
wc5	1801.453	2-Year	3.14	87.80	88.48	88.38	88.64	0.007901	1.86	1.99	24.12	0.75
wc5	1693.967	100-Year	13.58	87.47	88.48		88.58	0.005516	1.90	15.22	26.85	0.65
wc5	1693.967	5-Year	5.46	87.47	88.16		88.24	0.006841	1.56	7.15	24.30	0.67
wc5	1693.967	2-Year	3.14	87.47	88.05	88.02	88.12	0.006435	1.31	4.61	23.02	0.63
wc5	1602.883	100-Year	13.58	87.00	88.03		88.09	0.003130	1.57	18.77	27.91	0.51
wc5	1602.883	5-Year	5.46	87.00	87.70		87.74	0.002829	1.15	10.16	25.32	0.45
wc5	1602.883	2-Year	3.14	87.00	87.54		87.58	0.003429	1.05	6.19	23.44	0.47
wc5	1537.467	100-Year	13.58	86.60	87.92		87.95	0.001380	1.22	25.00	29.62	0.35
wc5	1537.467	5-Year	5.46	86.60	87.65		87.66	0.000634	0.70	17.26	27.45	0.23
wc5	1537.467	2-Year	3.14	86.60	87.08	87.08	87.20	0.012047	1.70	3.30	17.61	0.85
wc5	1471.795	100-Year	13.58	86.20	87.89		87.90	0.000384	0.74	39.56	39.24	0.19
wc5	1471.795	5-Year	5.46	86.20	87.64		87.64	0.000130	0.38	30.07	35.87	0.11
wc5	1471.795	2-Year	3.14	86.20	87.04		87.05	0.000598	0.53	11.24	28.32	0.21
wc5	1439.675	100-Year	13.58	86.00	87.88		87.89	0.000288	0.70	45.39	39.54	0.17
wc5	1439.675	5-Year	5.46	86.00	87.63		87.64	0.000084	0.34	36.25	35.72	0.09
wc5	1439.675	2-Year	3.14	86.00	87.03		87.04	0.000249	0.42	16.36	30.20	0.14
wc5	1320.692	100-Year	16.52	85.60	87.85		87.87	0.000268	0.76	61.89	69.27	0.17
wc5	1320.692	5-Year	6.42	85.60	87.63		87.63	0.000069	0.36	47.15	58.28	0.08
wc5	1320.692	2-Year	3.81	85.60	87.02		87.02	0.000090	0.32	25.83	29.91	0.09
wc5	1316.508	100-Year	16.52	85.26	87.83	87.76	87.85	0.001588	1.02	50.50	238.23	0.34

HEC-RAS Plan: 5&6 BSS1-Ultimate River: wc56centrelines Reach: wc5 (Continued)

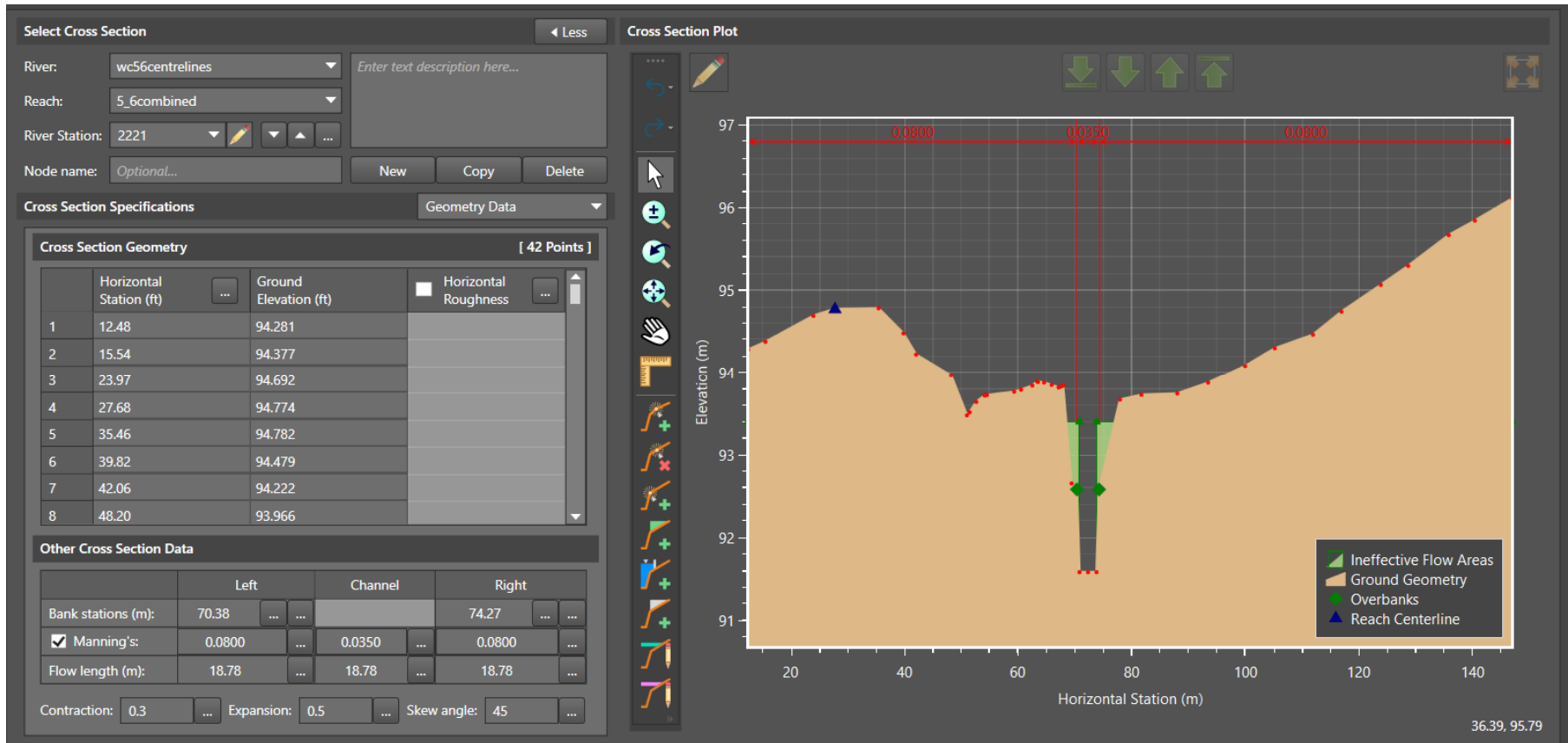
Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	1316.508	5-Year	6.42	85.26	87.40	86.49	87.60	0.001779	2.00	3.21	21.35	0.44
wc5	1316.508	2-Year	3.81	85.26	86.88	86.13	87.00	0.001580	1.57	2.43	8.92	0.39
wc5	1307.90		Culvert									
wc5	1291.617	100-Year	16.52	85.21	87.77	87.77	87.84	0.004681	1.68	26.19	173.41	0.58
wc5	1291.617	5-Year	6.42	85.21	86.44	86.44	87.06	0.011321	3.49	1.84	6.18	1.00
wc5	1291.617	2-Year	3.81	85.21	86.08	86.08	86.51	0.012740	2.93	1.30	5.04	1.01
wc5	1288.054	100-Year	16.52	85.00	86.51		86.86	0.007836	2.62	6.39	5.90	0.78
wc5	1288.054	5-Year	6.42	85.00	86.03		86.19	0.007299	1.76	3.65	5.52	0.69
wc5	1288.054	2-Year	3.81	85.00	85.81		85.92	0.007304	1.52	2.50	4.72	0.67
wc5	1225.493	100-Year	16.52	84.72	86.22		86.55	0.007745	2.59	6.74	7.50	0.78
wc5	1225.493	5-Year	6.42	84.72	85.74		85.90	0.007602	1.78	3.61	5.58	0.70
wc5	1225.493	2-Year	3.81	84.72	85.52		85.64	0.007599	1.54	2.47	4.69	0.68
wc5	1157.883	100-Year	16.52	84.21	85.71	85.57	86.03	0.007581	2.56	6.98	8.50	0.77
wc5	1157.883	5-Year	6.42	84.21	85.24		85.39	0.007400	1.77	3.64	5.65	0.69
wc5	1157.883	2-Year	3.81	84.21	85.01		85.13	0.007400	1.53	2.49	4.71	0.67
wc5	1131.031	100-Year	16.52	84.01	85.56	85.39	85.83	0.006247	2.39	7.83	10.36	0.70
wc5	1131.031	5-Year	6.42	84.01	85.04		85.20	0.007139	1.75	3.68	5.79	0.68
wc5	1131.031	2-Year	3.81	84.01	84.82		84.94	0.007146	1.51	2.52	4.74	0.66
wc5	1112.568	100-Year	16.52	83.88	85.33	85.25	85.69	0.008761	2.68	6.62	8.28	0.82
wc5	1112.568	5-Year	6.42	83.88	84.90	84.74	85.06	0.007569	1.78	3.61	5.63	0.70
wc5	1112.568	2-Year	3.81	83.88	84.68	84.53	84.80	0.007564	1.54	2.47	4.69	0.68
wc5	1071.480	100-Year	16.52	83.57	85.16	85.04	85.38	0.004992	2.19	9.77	18.52	0.63
wc5	1071.480	5-Year	6.42	83.57	84.59		84.75	0.007500	1.77	3.62	5.56	0.70
wc5	1071.480	2-Year	3.81	83.57	84.37		84.49	0.007510	1.54	2.48	4.70	0.68
wc5	1034.499	100-Year	16.52	83.29	84.79	84.64	85.14	0.007877	2.62	6.49	6.41	0.78
wc5	1034.499	5-Year	6.42	83.29	84.34	84.15	84.49	0.006433	1.69	3.80	5.60	0.65
wc5	1034.499	2-Year	3.81	83.29	84.10	83.94	84.21	0.007258	1.52	2.51	4.73	0.66
wc5	1013.774	100-Year	16.52	83.14	84.51	84.51	84.93	0.011504	2.91	6.05	8.28	0.93
wc5	1013.774	5-Year	6.42	83.14	84.00	84.00	84.27	0.016212	2.34	2.75	4.92	1.00
wc5	1013.774	2-Year	3.81	83.14	83.94	83.79	84.06	0.007591	1.54	2.47	4.69	0.68
wc5	951.8970	100-Year	21.77	82.62	84.24	83.93	84.26	0.001218	1.05	51.79	209.51	0.31
wc5	951.8970	5-Year	8.75	82.62	83.97	83.72	83.99	0.001004	0.81	18.85	51.42	0.27
wc5	951.8970	2-Year	5.29	82.62	83.65	83.45	83.73	0.004021	1.29	5.82	28.24	0.51
wc5	942.8887	100-Year	21.77	82.59	84.19	84.19	84.25	0.002962	1.59	41.65	283.81	0.48
wc5	942.8887	5-Year	8.75	82.59	83.66	83.57	83.95	0.009925	2.39	3.66	7.04	0.84
wc5	942.8887	2-Year	5.29	82.59	83.55	83.36	83.69	0.005977	1.68	3.15	5.32	0.63
wc5	937.1887		Culvert									
wc5	931	100-Year	21.77	82.47	84.18	84.18	84.21	0.001756	1.28	54.17	304.53	0.37
wc5	931	5-Year	8.75	82.47	83.54	83.46	83.84	0.010215	2.41	3.62	8.54	0.85
wc5	931	2-Year	5.29	82.47	83.51	83.24	83.63	0.004221	1.51	3.49	7.35	0.54
wc5	918.3739	100-Year	21.77	82.41	83.85	83.57	83.85	0.000039	0.16	161.07	174.94	0.05
wc5	918.3739	5-Year	8.75	82.41	83.69	83.57	83.69	0.000012	0.08	133.07	174.60	0.03
wc5	918.3739	2-Year	5.29	82.41	83.41	83.28	83.55	0.008377	1.65	3.20	6.17	0.72
wc5	815.3577	100-Year	21.77	81.85	83.41	83.41	83.80	0.014220	2.76	7.89	10.13	1.00
wc5	815.3577	5-Year	8.75	81.85	83.69	82.85	83.69	0.000003	0.04	231.09	222.90	0.01
wc5	815.3577	2-Year	5.29	81.85	83.13	82.62	83.18	0.002198	0.99	5.33	7.78	0.38
wc5	680.8133	100-Year	24.44	81.64	83.57	83.10	83.57	0.000002	0.06	484.63	277.16	0.01
wc5	680.8133	5-Year	9.83	81.64	83.69	82.69	83.69	0.000000	0.02	516.60	277.24	0.01
wc5	680.8133	2-Year	5.94	81.64	83.07	82.46	83.12	0.001267	1.00	6.07	6.45	0.31
wc5	678.6898	100-Year	24.44	81.55	83.57	83.15	83.57	0.000002	0.05	553.05	276.54	0.01
wc5	678.6898	5-Year	9.83	81.55	83.69	82.60	83.69	0.000000	0.02	585.77	298.94	0.00
wc5	678.6898	2-Year	5.94	81.55	83.06	82.37	83.10	0.000995	0.93	6.52	6.36	0.28
wc5	665	100-Year	24.44	81.40	83.57	82.83	83.57	0.000037	0.22	221.28	388.44	0.06
wc5	665	5-Year	9.83	81.40	83.69	82.54	83.69	0.000004	0.07	266.57	388.44	0.02
wc5	665	2-Year	5.94	81.40	83.07	82.34	83.07	0.000045	0.18	66.24	177.89	0.06
wc5	660	100-Year	24.44	81.32	83.52	83.52	83.57	0.011856	1.55	36.93	338.60	0.80
wc5	660	5-Year	9.83	81.32	82.91	82.91	83.62	0.012291	3.72	2.64	7.15	1.01

HEC-RAS Plan: 5&6 BSS1-Ultimate River: wc56centrelines Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	660	2-Year	5.94	81.32	82.52	82.52	83.02	0.013569	3.13	1.90	5.53	1.00
wc5	655		Culvert									
wc5	651.8919	100-Year	24.44	80.93	83.48	83.48	83.52	0.003242	1.52	65.49	496.40	0.49
wc5	651.8919	5-Year	9.83	80.93	82.32	82.32	83.00	0.011197	3.67	2.68	387.46	1.00
wc5	651.8919	2-Year	5.94	80.93	81.92	81.92	82.42	0.012580	3.11	1.91	5.47	1.00
wc5	648.3854	100-Year	24.44	80.78	82.63	81.93	82.63	0.000002	0.05	685.55	481.45	0.01
wc5	648.3854	5-Year	9.83	80.78	81.84	81.84	82.17	0.014452	2.56	3.88	7.02	0.98
wc5	648.3854	2-Year	5.94	80.78	81.60	81.60	81.87	0.016365	2.30	2.58	4.79	1.00
wc5	553.6066	100-Year	24.44	80.14	82.63	81.56	82.63	0.000002	0.06	663.32	479.87	0.01
wc5	553.6066	5-Year	9.83	80.14	81.80	81.14	81.80	0.000303	0.45	42.18	151.42	0.15
wc5	553.6066	2-Year	5.94	80.14	81.35	80.96	81.39	0.002050	0.88	6.75	11.72	0.37
wc5	521.5115	100-Year	24.44	80.04	82.63	81.68	82.63	0.000003	0.08	562.10	343.24	0.02
wc5	521.5115	5-Year	9.83	80.04	81.80	81.10	81.80	0.000005	0.07	278.33	340.48	0.02
wc5	521.5115	2-Year	5.94	80.04	81.28	80.86	81.35	0.002448	1.22	5.19	8.86	0.42
wc5	518.7136	100-Year	23.86	79.98	81.76	81.76	82.55	0.011269	3.95	6.04	342.02	1.00
wc5	518.7136	5-Year	11.06	79.98	81.55	81.12	81.78	0.003826	2.10	5.27	27.82	0.57
wc5	518.7136	2-Year	6.88	79.98	81.13	80.86	81.31	0.005071	1.89	3.64	6.98	0.62
wc5	503.04		Culvert									
wc5	487.5449	100-Year	23.86	79.68	81.38	81.38	82.18	0.010823	3.95	6.04	417.08	1.00
wc5	487.5449	5-Year	11.06	79.68	80.75	80.75	81.22	0.012802	3.05	3.62	12.90	1.00
wc5	487.5449	2-Year	6.88	79.68	80.58	80.48	80.85	0.009250	2.29	3.00	11.00	0.82
wc5	484.1846	100-Year	23.86	79.63	81.06	80.89	81.12	0.002393	1.45	31.20	77.64	0.44
wc5	484.1846	5-Year	11.06	79.63	80.83	80.69	80.88	0.002170	1.17	16.01	52.82	0.40
wc5	484.1846	2-Year	6.88	79.63	80.64	80.39	80.72	0.003426	1.25	7.42	38.34	0.49
wc5	381.2556	100-Year	23.86	79.11	80.87	80.76	80.94	0.002303	1.62	33.61	77.58	0.44
wc5	381.2556	5-Year	11.06	79.11	80.64	80.22	80.71	0.002070	1.36	16.39	70.17	0.40
wc5	381.2556	2-Year	6.88	79.11	80.33	79.99	80.44	0.003637	1.47	4.70	5.58	0.51
wc5	359.8282	100-Year	23.86	78.85	80.65	80.65	80.80	0.004954	2.17	25.48	98.88	0.61
wc5	359.8282	5-Year	11.06	78.85	80.23	80.11	80.53	0.010437	2.43	4.57	5.69	0.83
wc5	359.8282	2-Year	6.88	78.85	80.03	79.84	80.22	0.007788	1.91	3.60	4.72	0.70
wc5	304.0528	100-Year	23.86	78.22	80.06	80.06	80.20	0.004080	2.07	26.81	136.19	0.58
wc5	304.0528	5-Year	11.06	78.22	79.51	79.51	79.79	0.011460	2.42	5.35	10.97	0.89
wc5	304.0528	2-Year	6.88	78.22	79.33	79.33	79.56	0.012711	2.13	3.51	9.27	0.89
wc5	250	100-Year	23.86	77.55	79.86		79.95	0.001536	1.34	21.37	42.47	0.36
wc5	250	5-Year	11.06	77.55	78.58	78.58	78.90	0.015275	2.51	4.41	7.03	1.01
wc5	250	2-Year	6.88	77.55	78.38	78.38	78.63	0.016359	2.24	3.07	6.14	1.01
wc5	230	100-Year	23.86	76.75	79.77	78.35	79.92	0.000969	1.70	14.07	116.19	0.33
wc5	230	5-Year	11.06	76.75	78.42	77.84	78.55	0.002099	1.57	7.04	12.54	0.43
wc5	230	2-Year	6.88	76.75	77.92	77.63	78.04	0.003808	1.55	4.42	9.61	0.54
wc5	215		Culvert									
wc5	200	100-Year	23.86	76.48	78.80		79.07	0.002670	2.30	10.39	15.86	0.52
wc5	200	5-Year	11.06	76.48	78.14		78.27	0.002189	1.59	6.95	11.03	0.44
wc5	200	2-Year	6.88	76.48	77.78		77.87	0.002380	1.35	5.10	8.74	0.43
wc5	170	100-Year	23.86	76.48	78.90	77.76	78.95	0.000501	1.01	29.00	19.29	0.23
wc5	170	5-Year	11.06	76.48	78.18	77.40	78.21	0.000583	0.81	15.85	17.05	0.23
wc5	170	2-Year	6.88	76.48	77.81	77.24	77.83	0.000824	0.76	9.49	12.75	0.25

# Cross Section Schematic – Within Block 1

WC5



# Cross Section Schematic – Within Block 1

### Select Cross Section

River:  Enter text description here...

Reach:

River Station:  New Copy Delete

Node name:

### Cross Section Plot

### Cross Section Specifications

Geometry Data

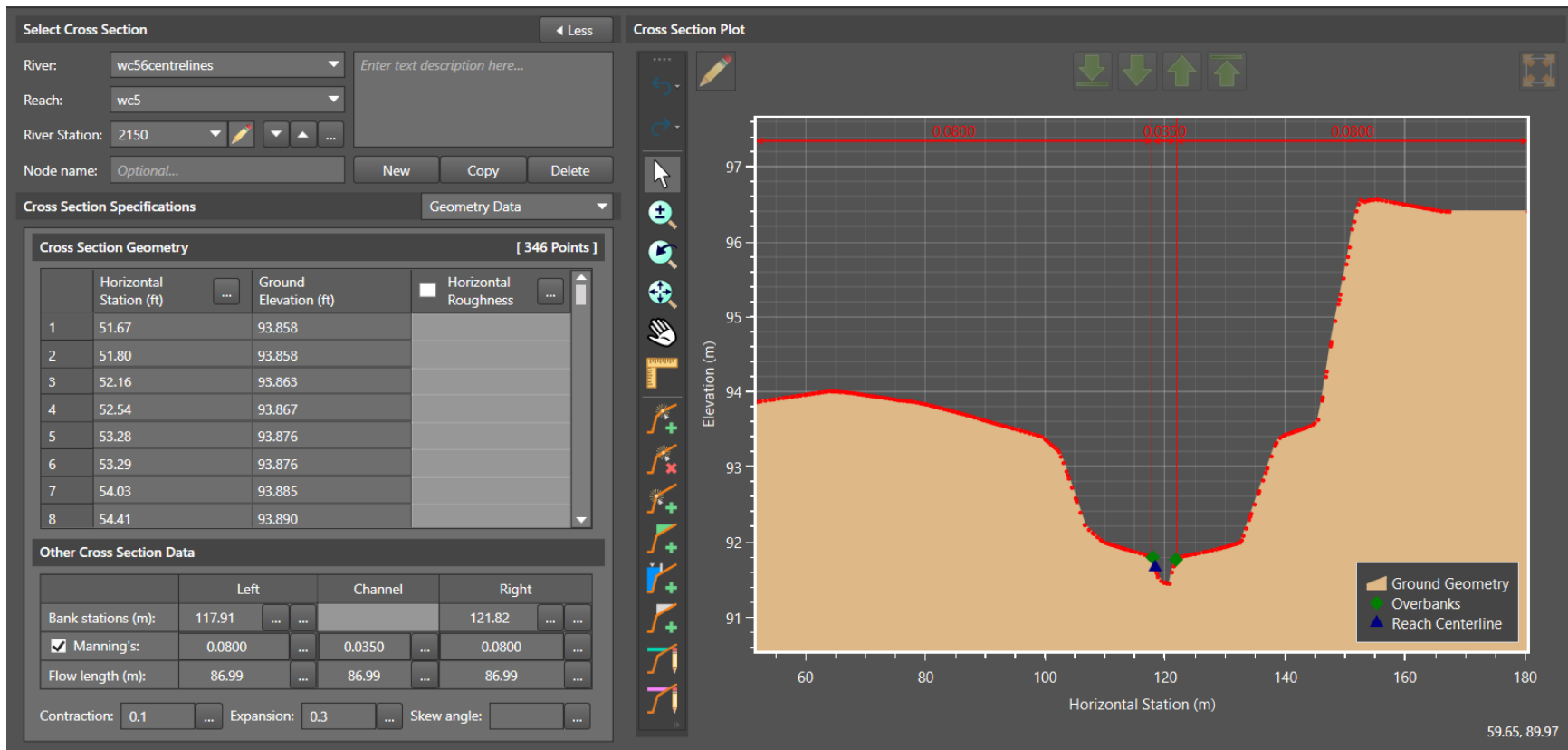
Cross Section Geometry [ 404 Points ]			
	Horizontal Station (ft)	Ground Elevation (ft)	Horizontal Roughness
1	45.61	93.799	
2	45.97	93.799	
3	46.40	93.800	
4	46.90	93.799	
5	47.13	93.799	
6	47.53	93.801	
7	47.86	93.802	
8	48.06	93.802	

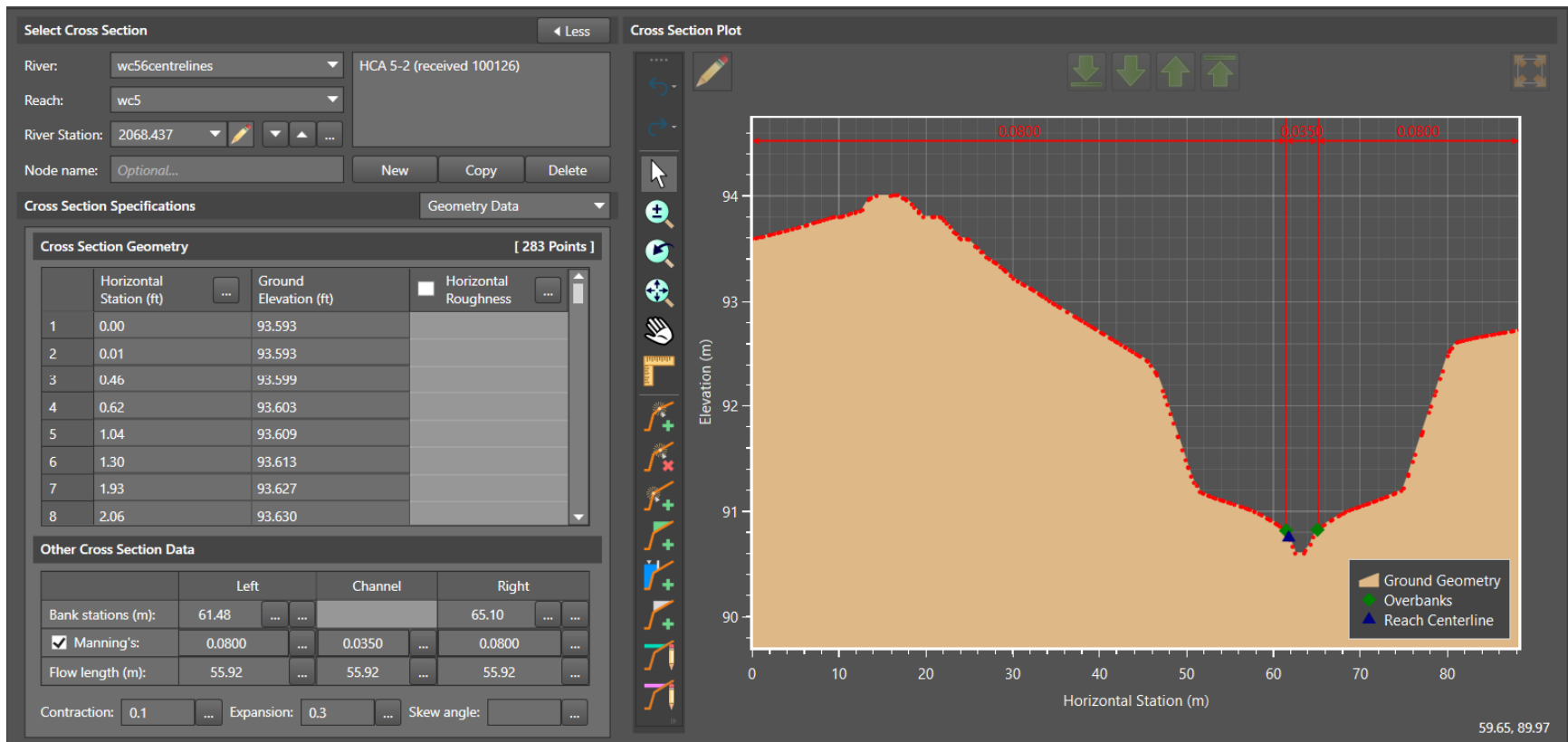
Other Cross Section Data				
	Left	Channel	Right	
Bank stations (m):	77.02		80.82	
<input checked="" type="checkbox"/> Manning's:	0.0800	0.0350	0.0800	
Flow length (m):	39.09	39.09	39.09	
Contraction:	0.1	Expansion:	0.3	Skew angle:

108.16, 91.18

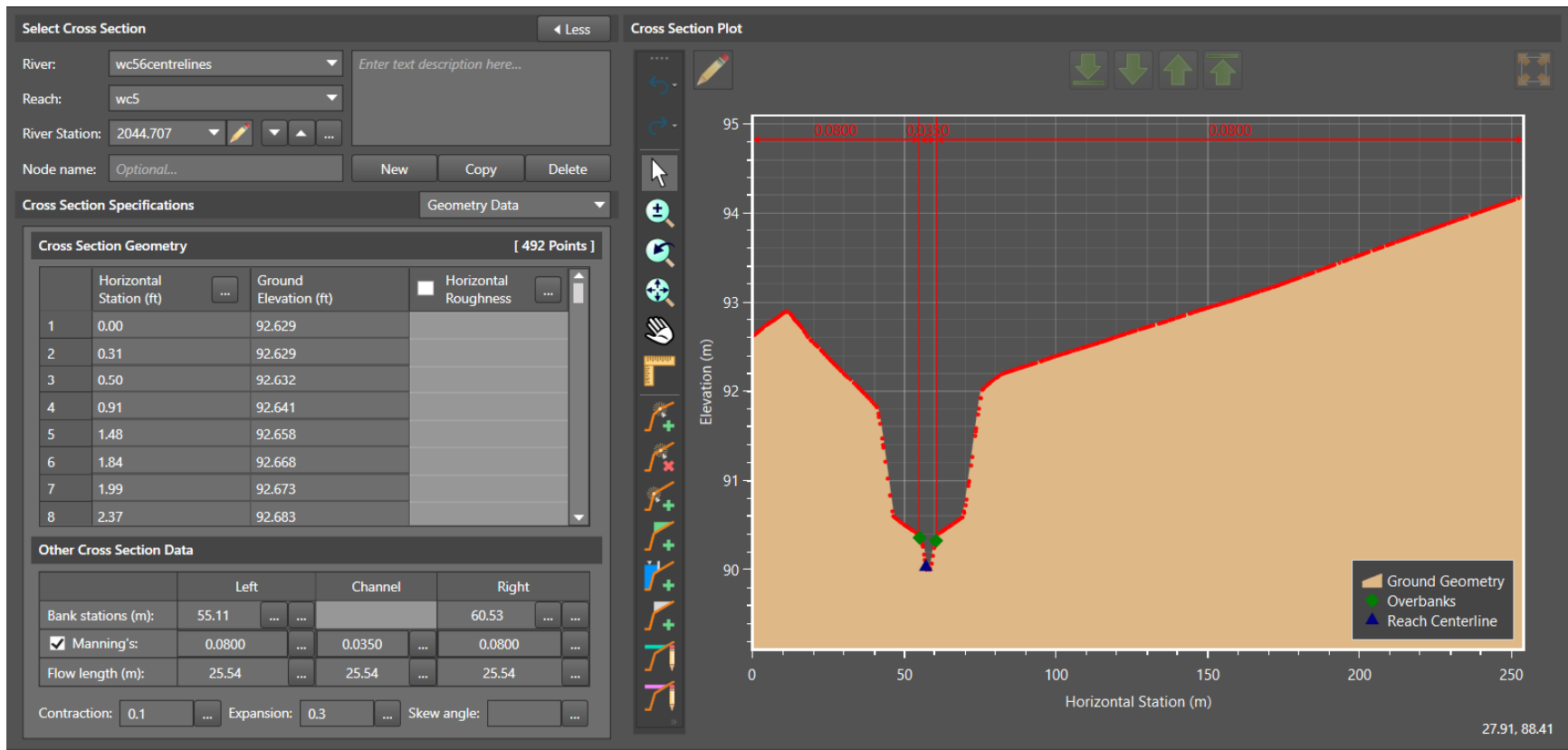
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

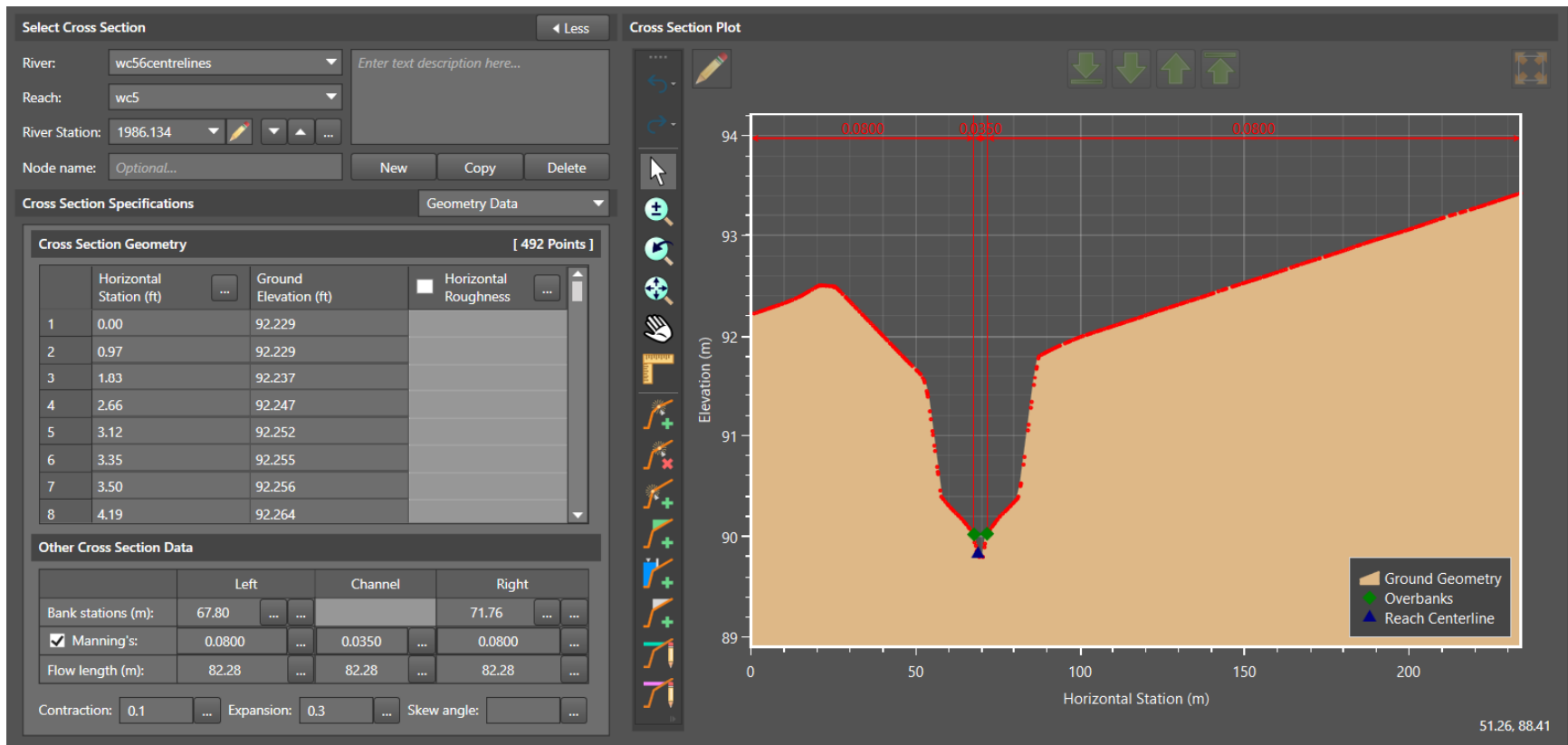


# Cross Section Schematic – Within Block 1

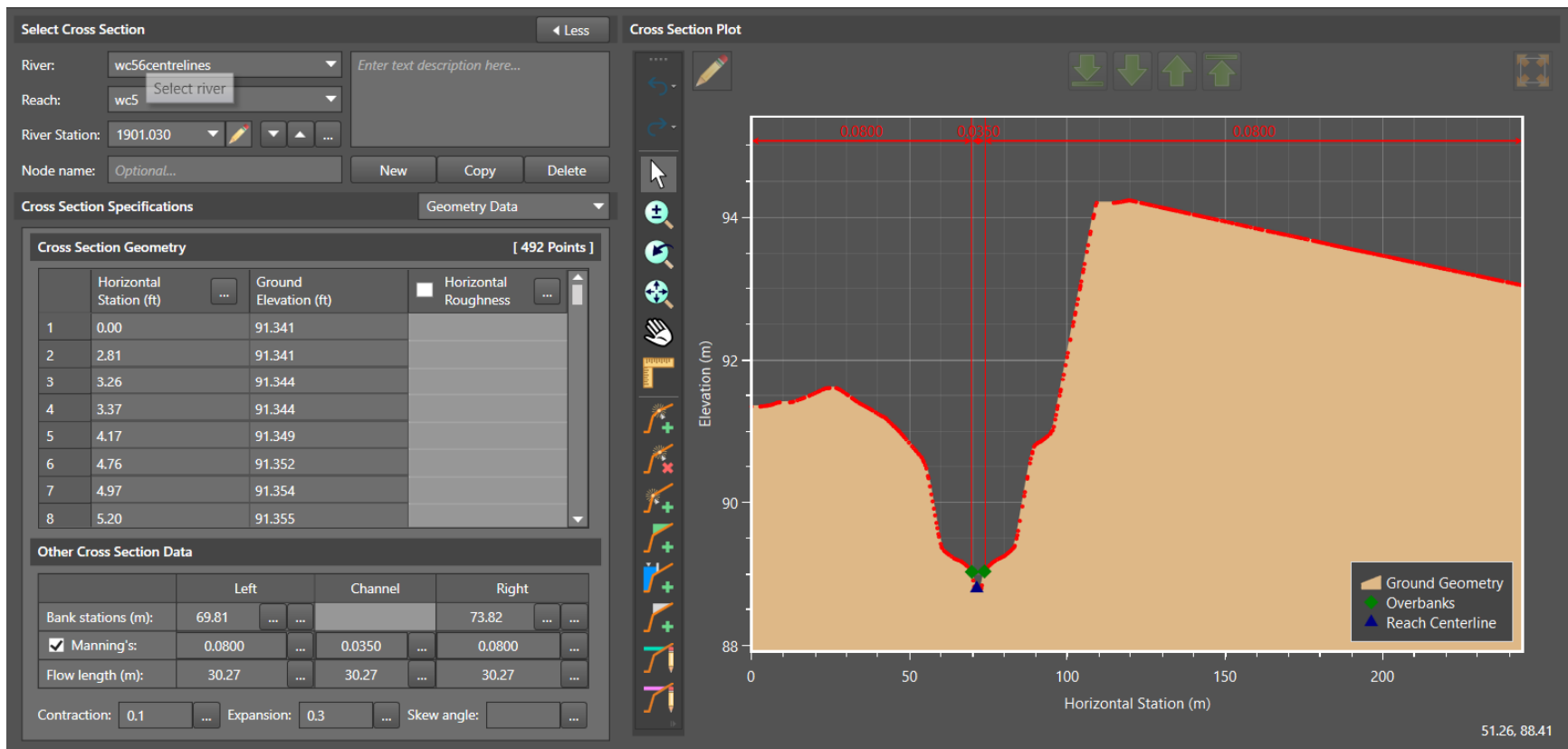




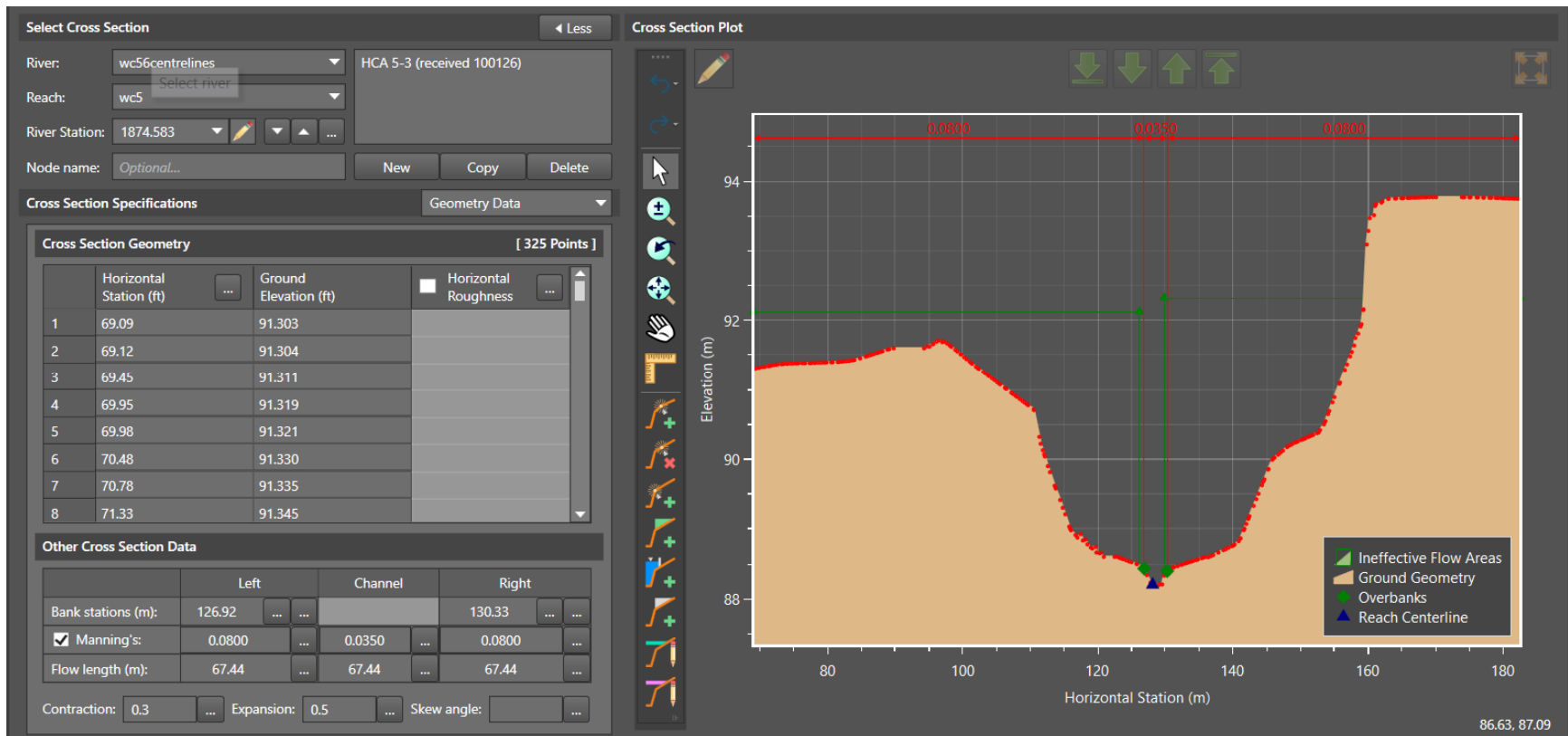
# Cross Section Schematic – Within Block 1



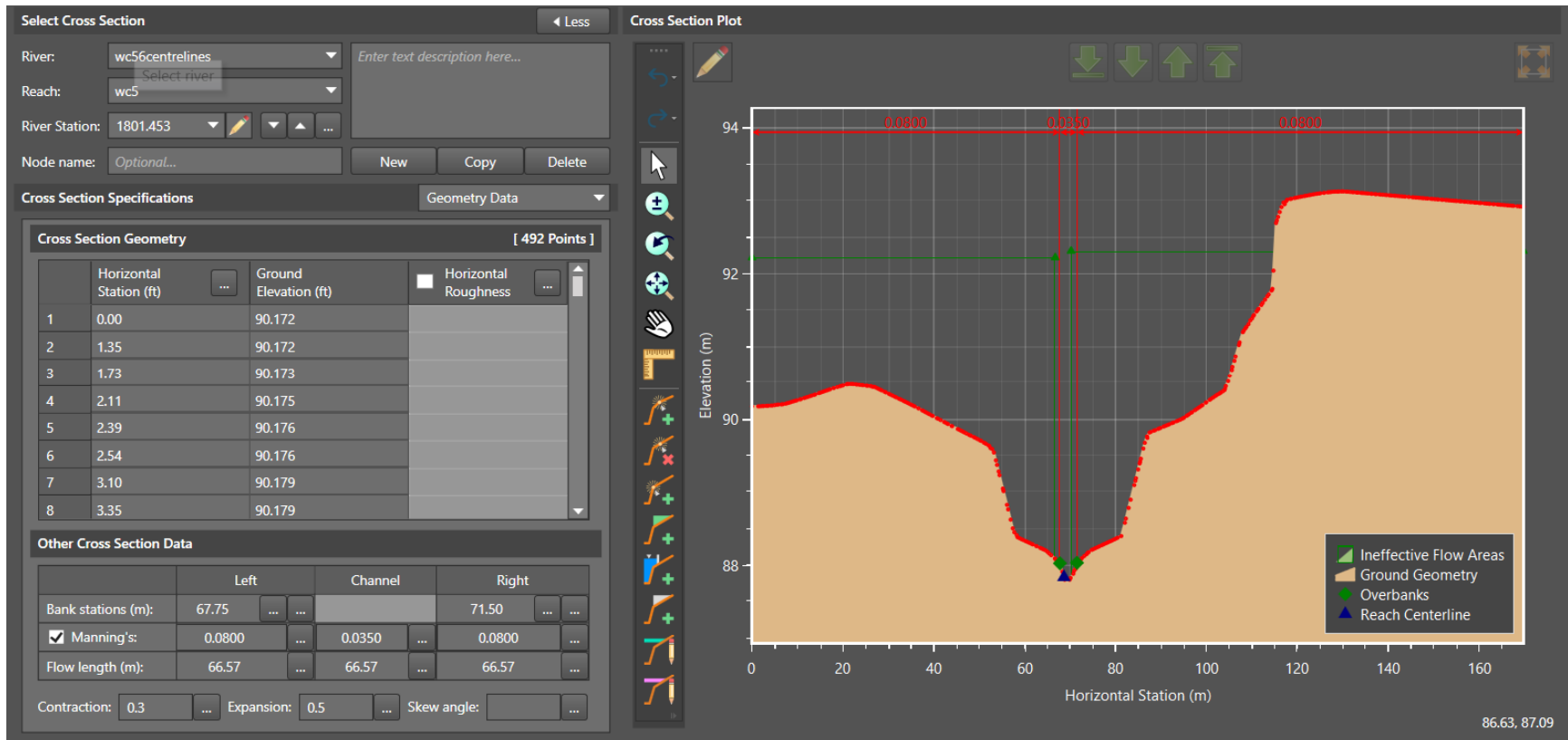
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

### Select Cross Section

River:  Enter text description here...

Reach:

River Station:

Node name:

### Cross Section Plot

### Cross Section Specifications

Geometry Data

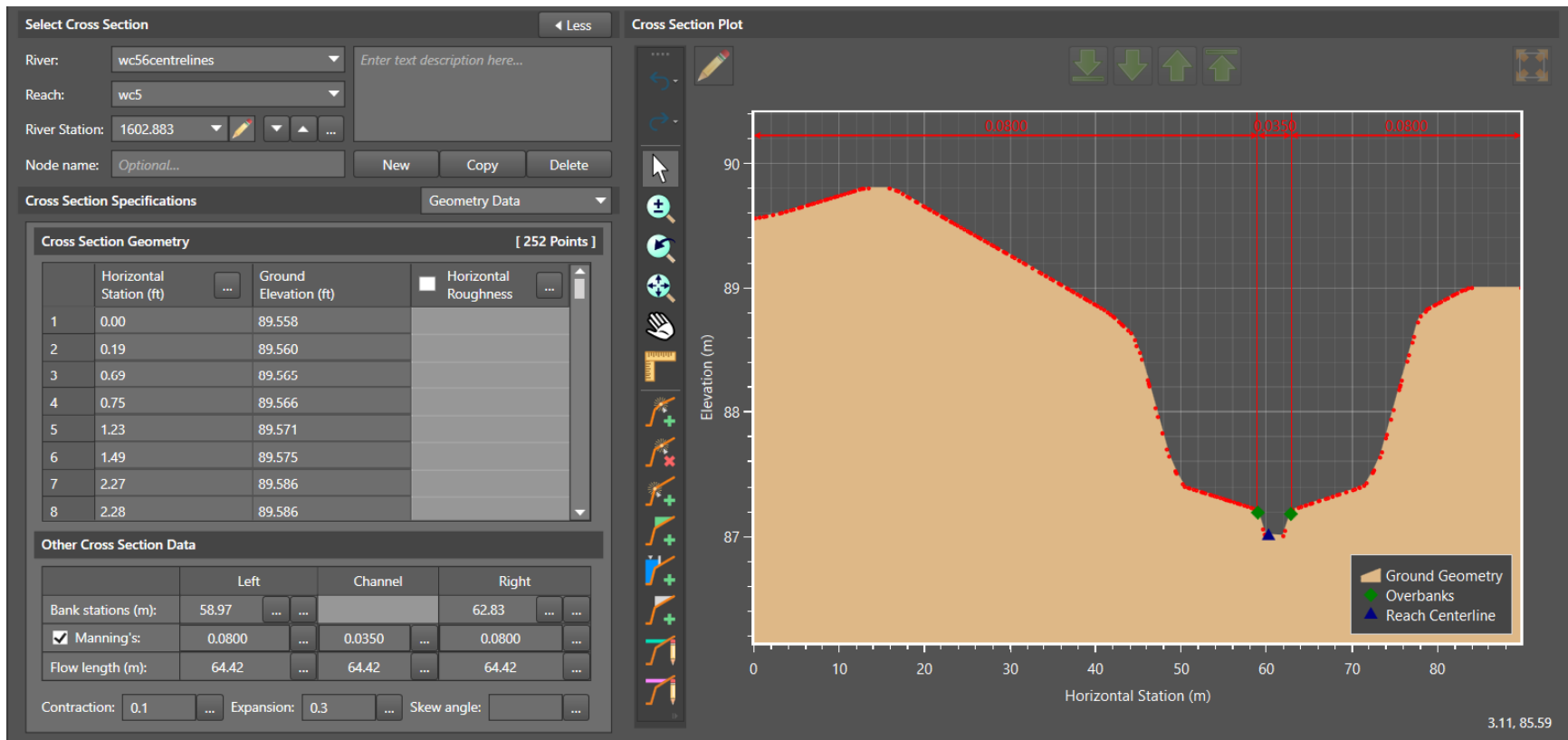
Cross Section Geometry [ 492 Points ]			
	Horizontal Station (ft)	Ground Elevation (ft)	Horizontal Roughness
1	0.00	89.510	
2	1.49	89.510	
3	2.29	89.516	
4	3.50	89.524	
5	4.55	89.530	
6	5.48	89.537	
7	5.60	89.537	
8	8.88	89.559	

### Other Cross Section Data

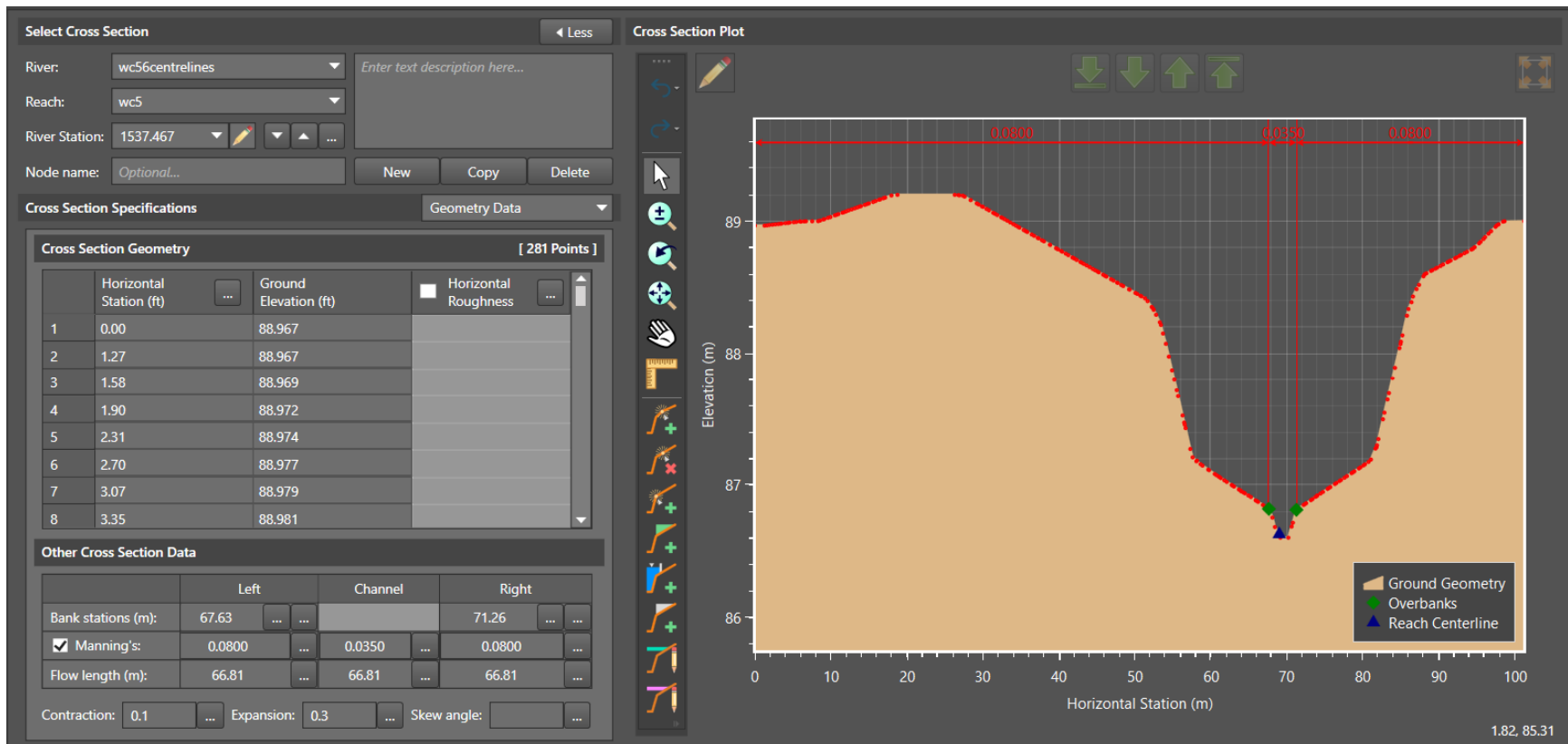
	Left	Channel	Right
Bank stations (m):	68.44		72.46
<input checked="" type="checkbox"/> Manning's:	0.0800	0.0350	0.0800
Flow length (m):	116.74	116.74	116.74

Contraction:  Expansion:  Skew angle:

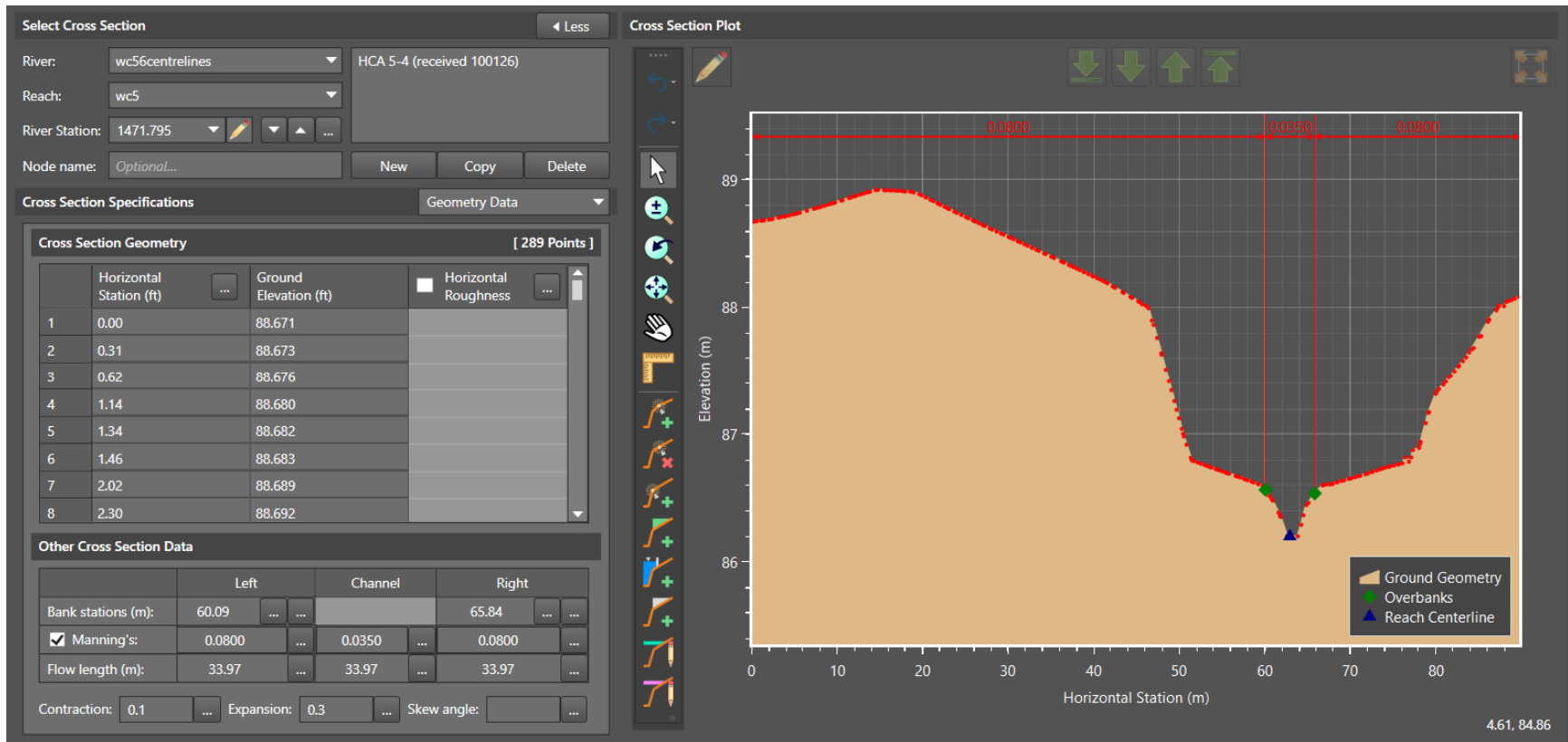
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

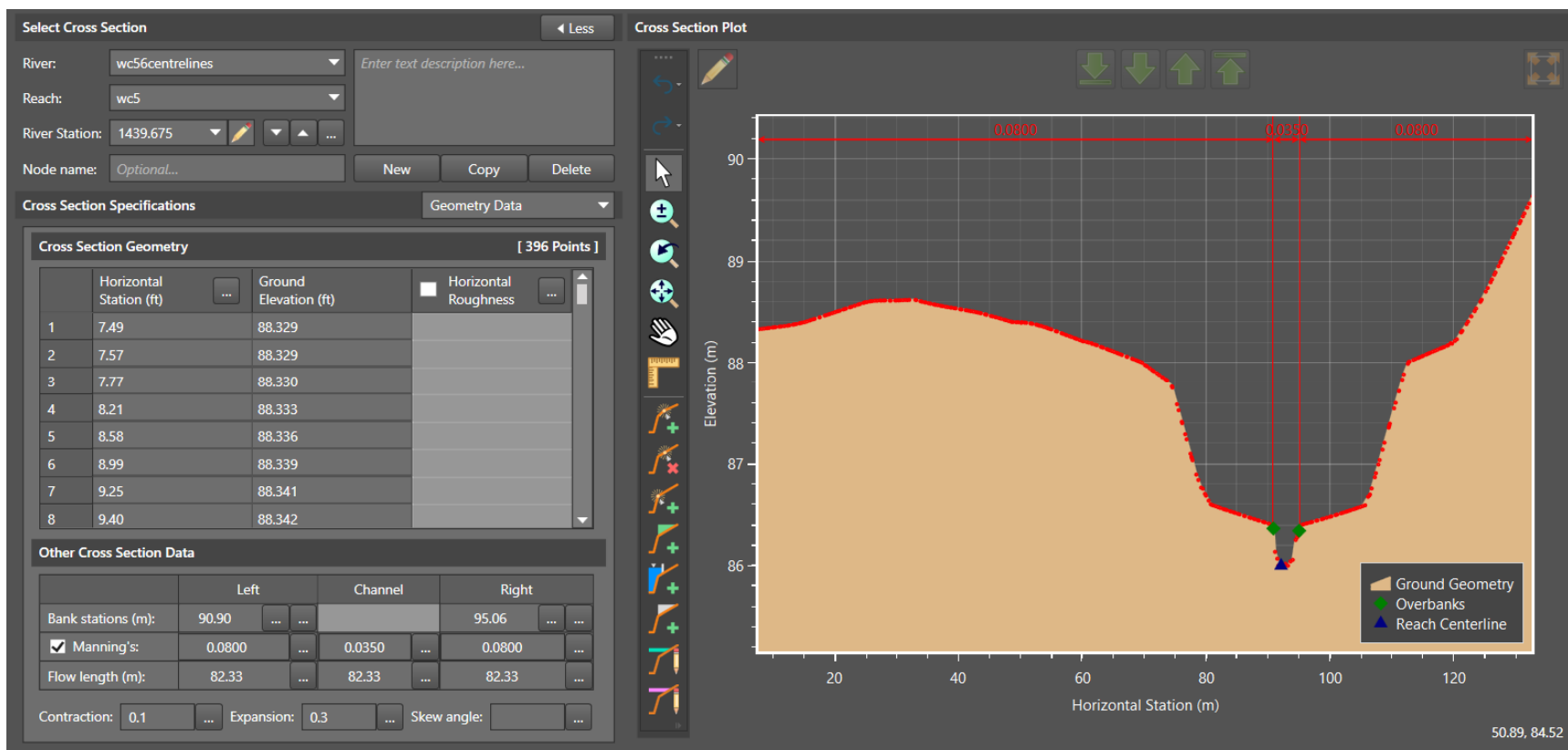


# Cross Section Schematic – Within Block 1

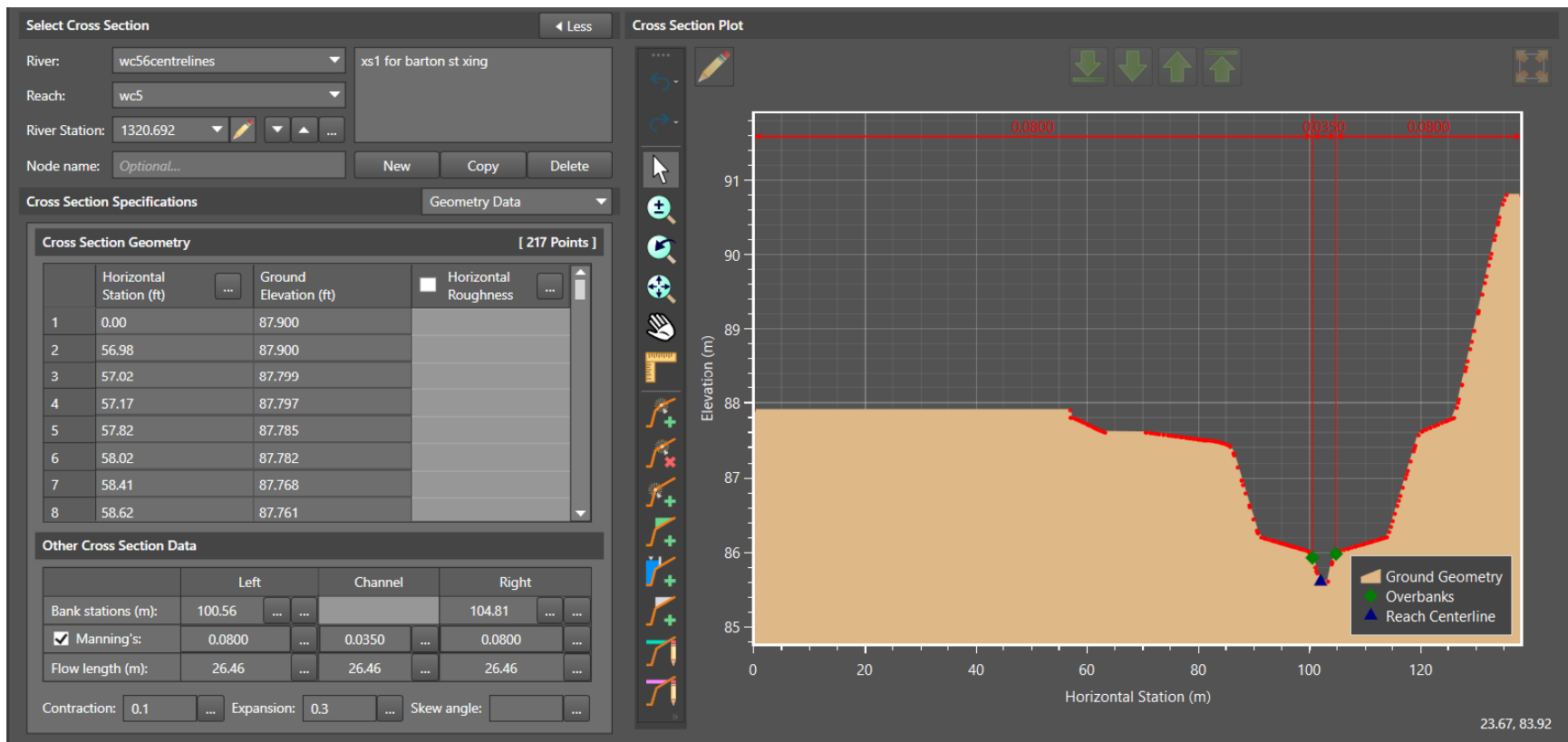




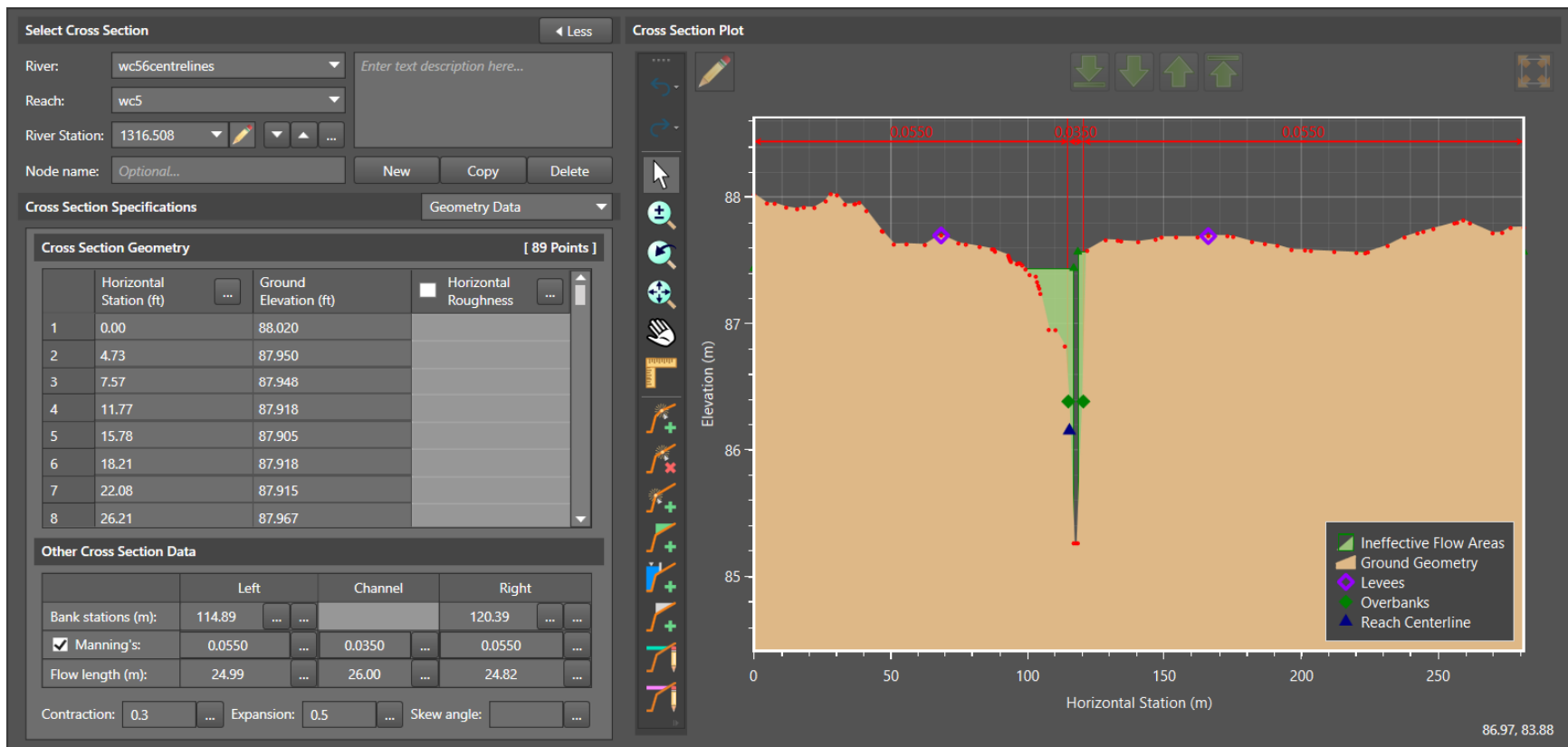
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

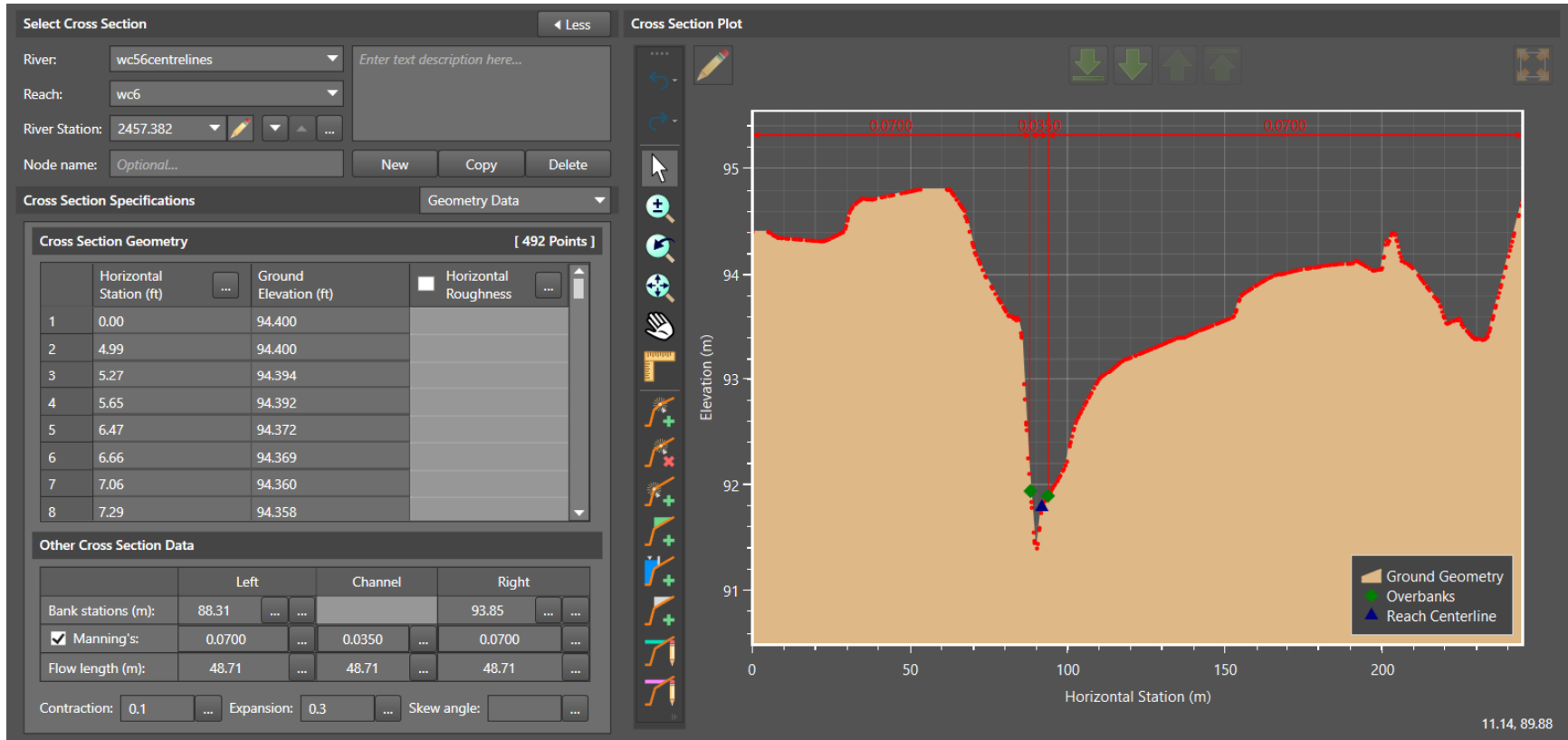


# Cross Section Schematic – Within Block 1

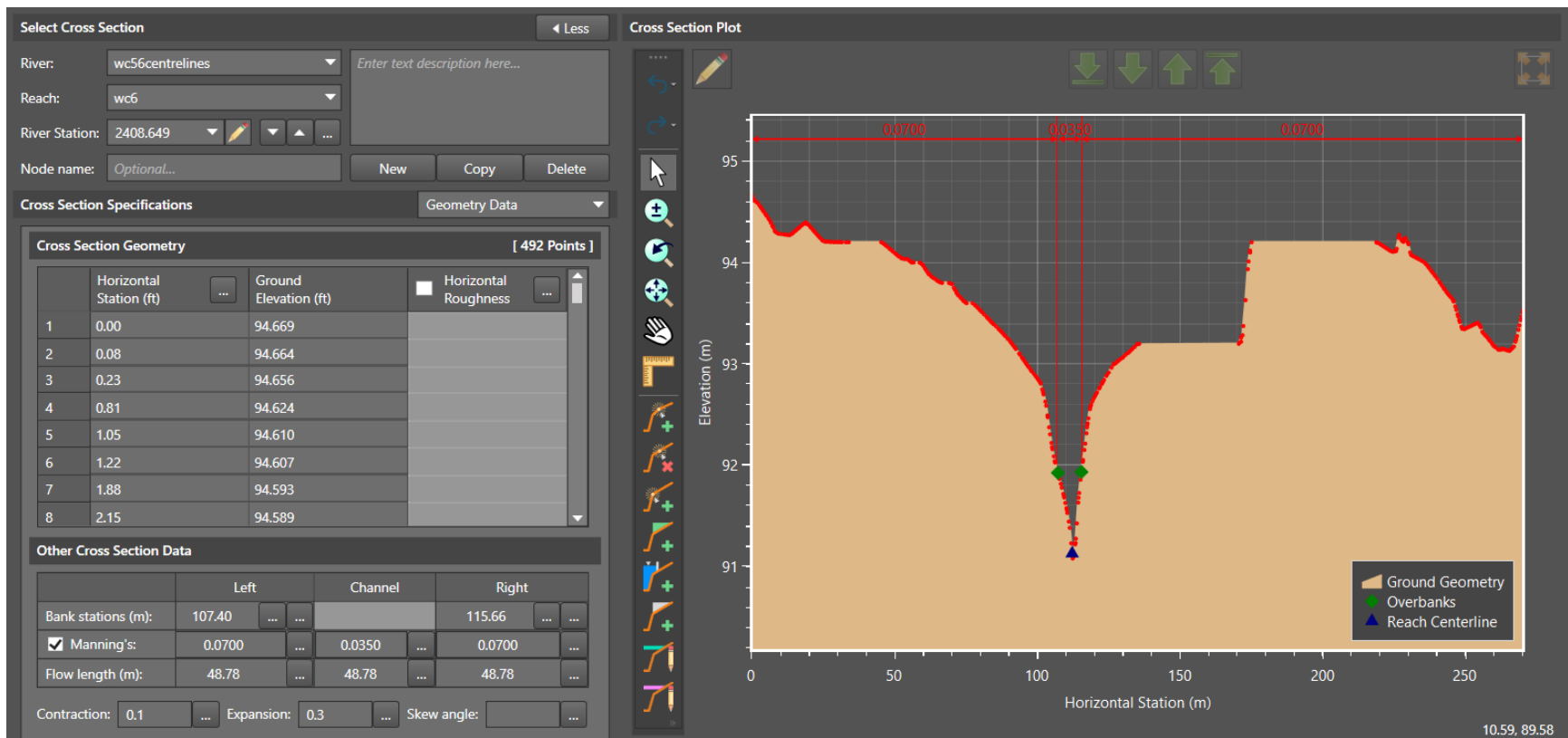


# Cross Section Schematic – Within Block 1

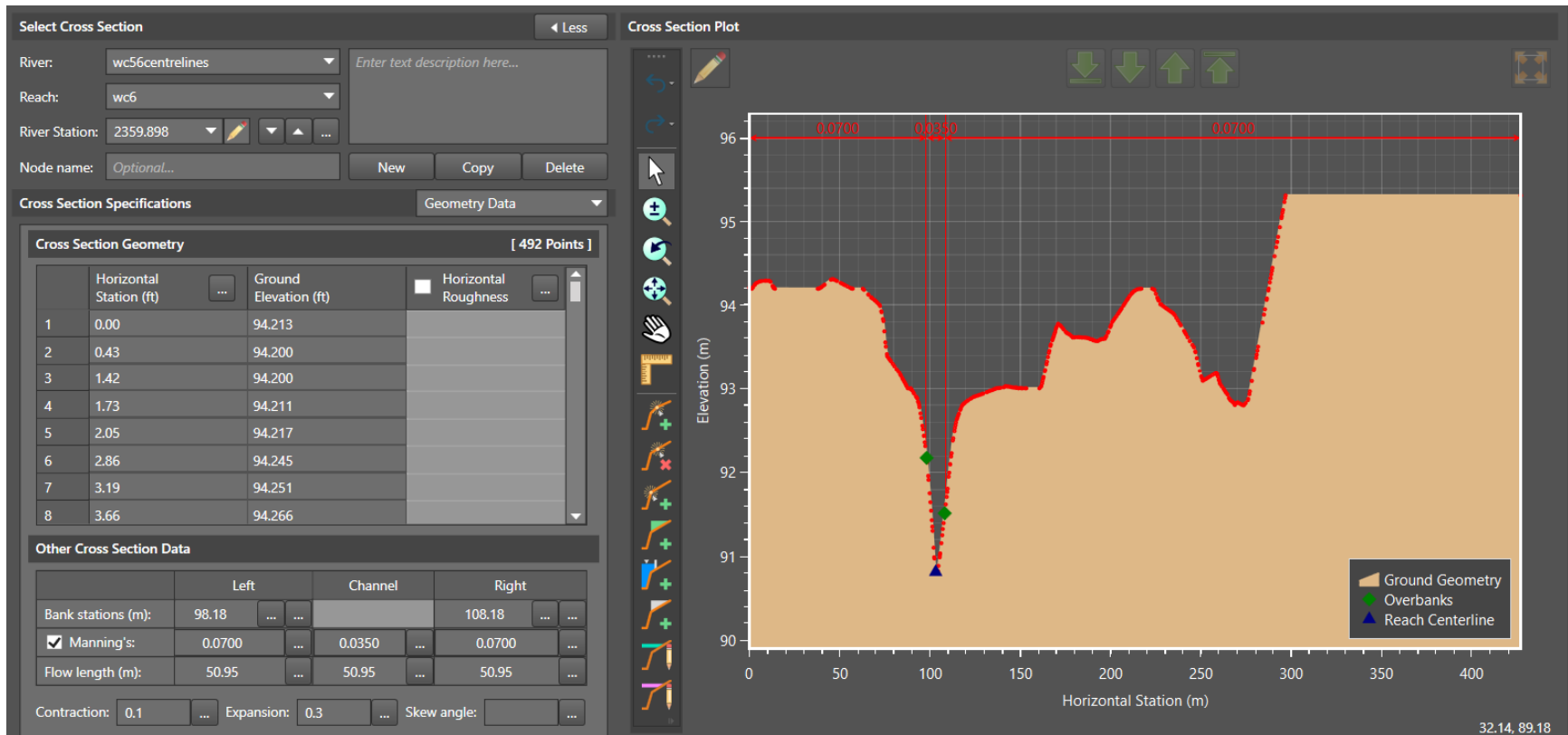
WC6



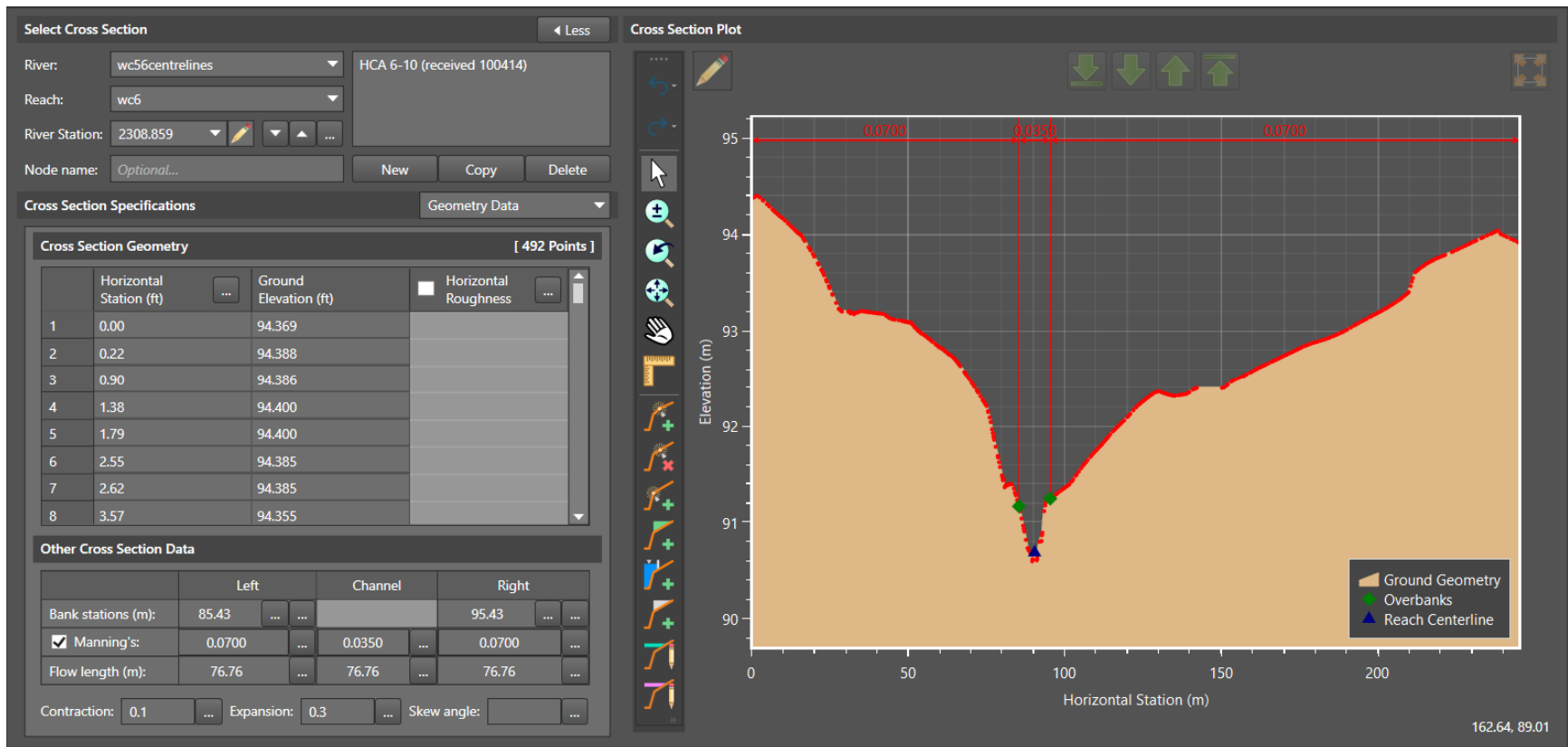
# Cross Section Schematic – Within Block 1



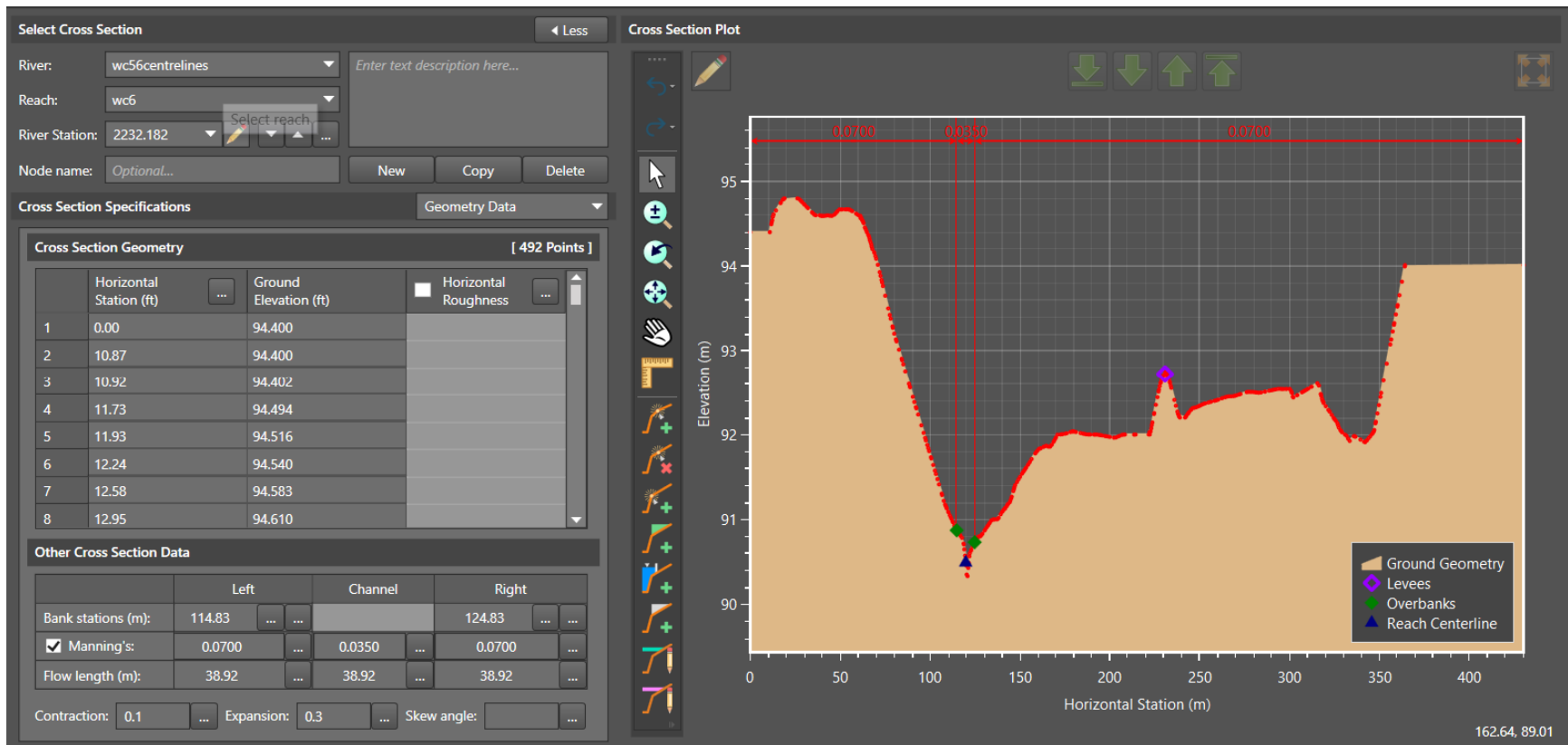
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

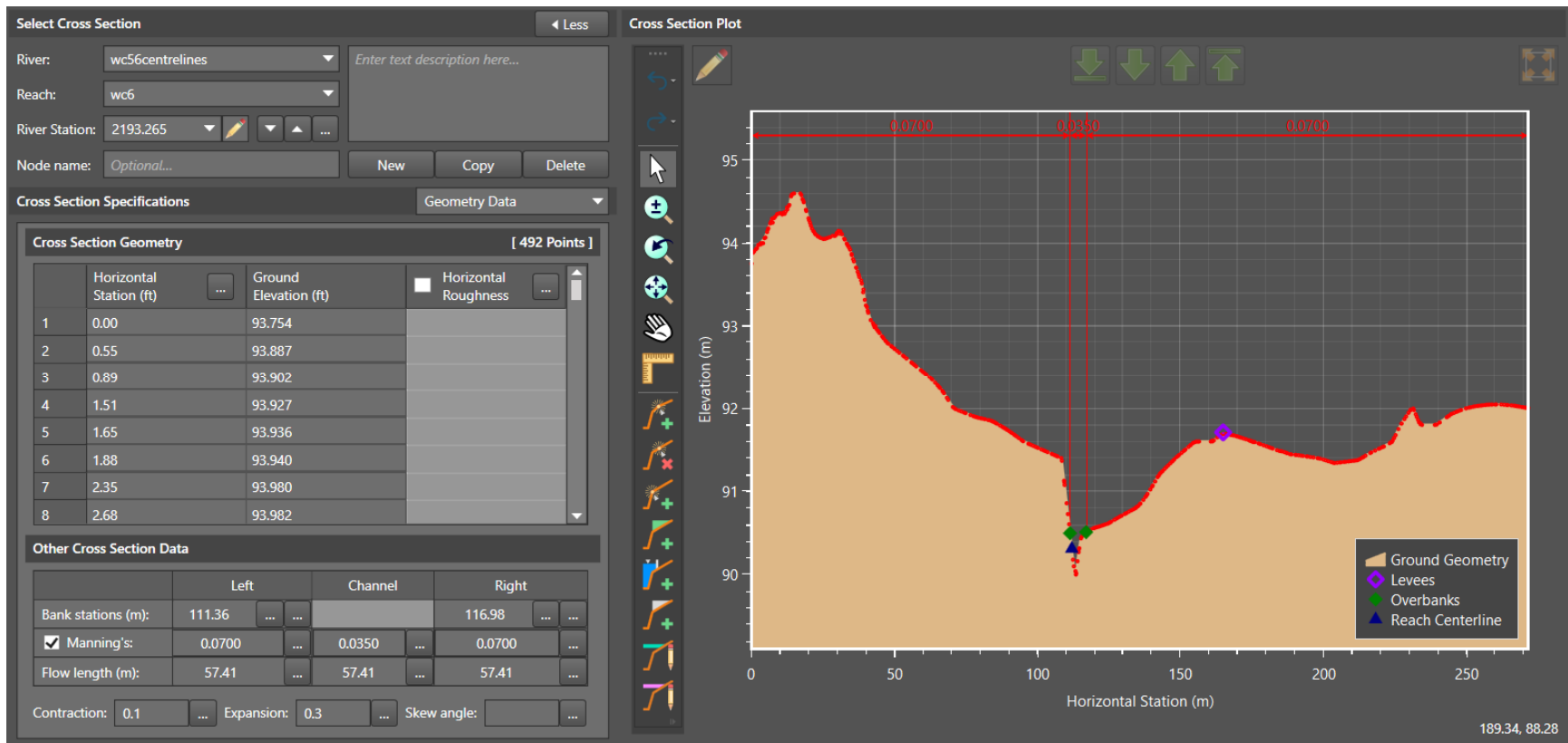


# Cross Section Schematic – Within Block 1

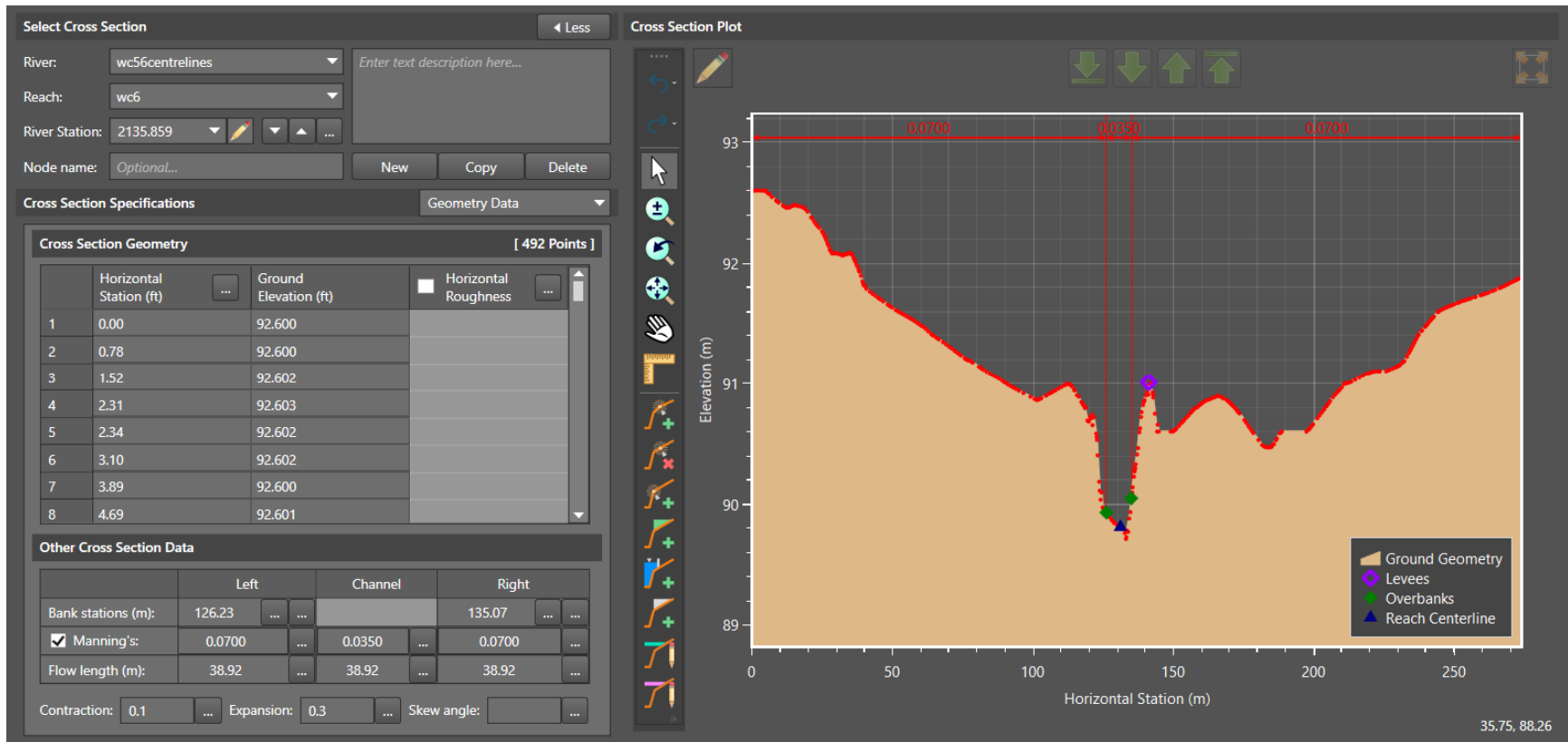




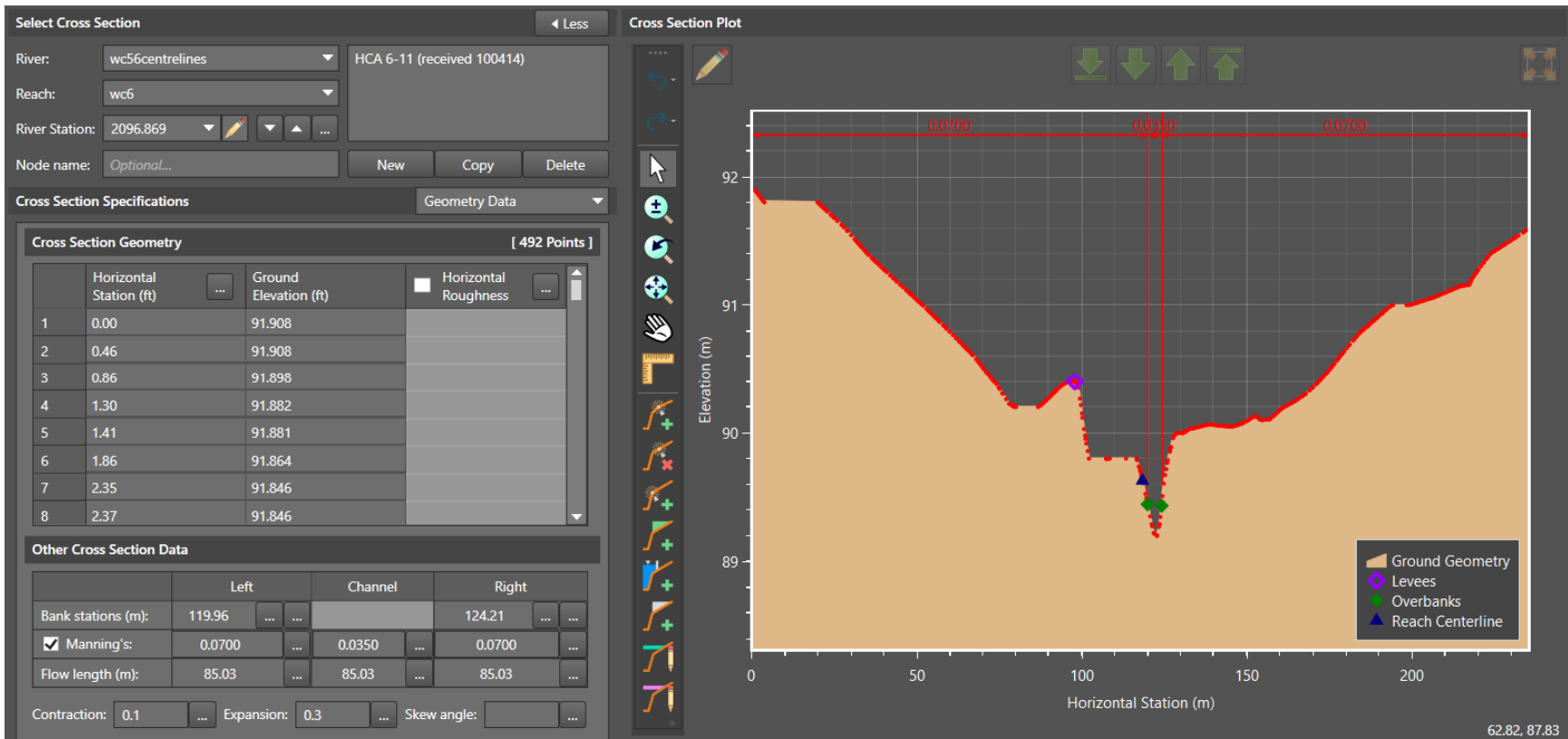
# Cross Section Schematic – Within Block 1



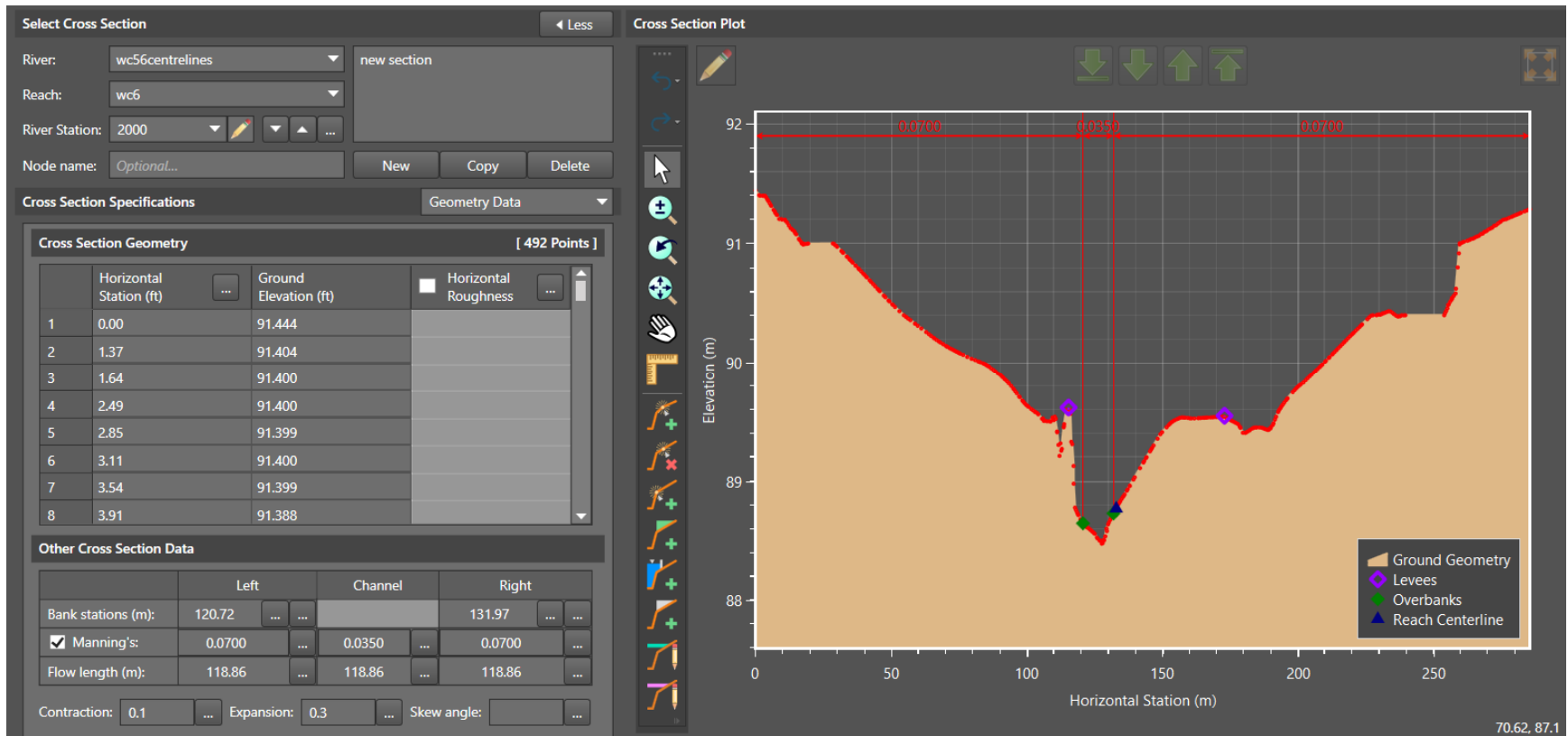
# Cross Section Schematic – Within Block 1



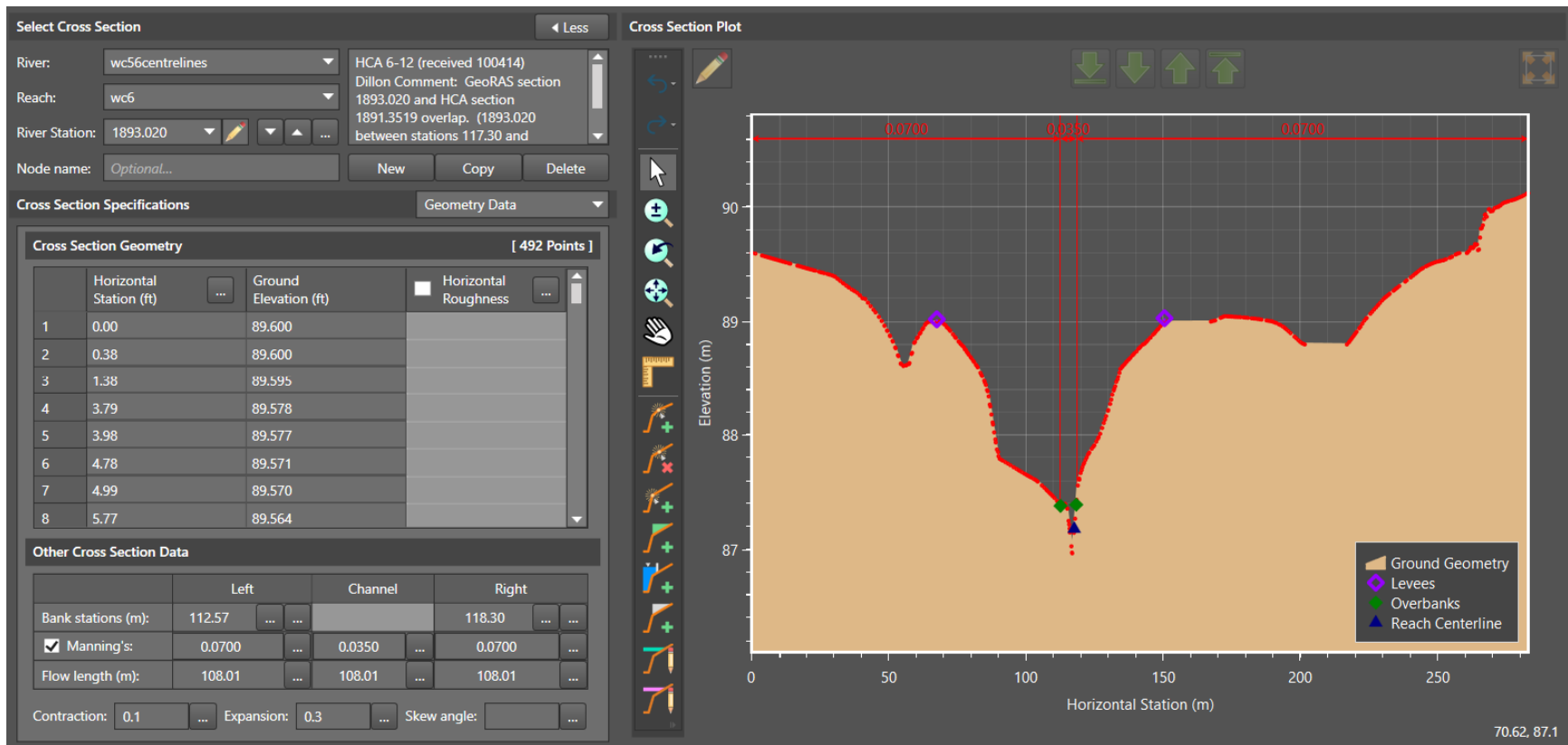
# Cross Section Schematic – Within Block 1



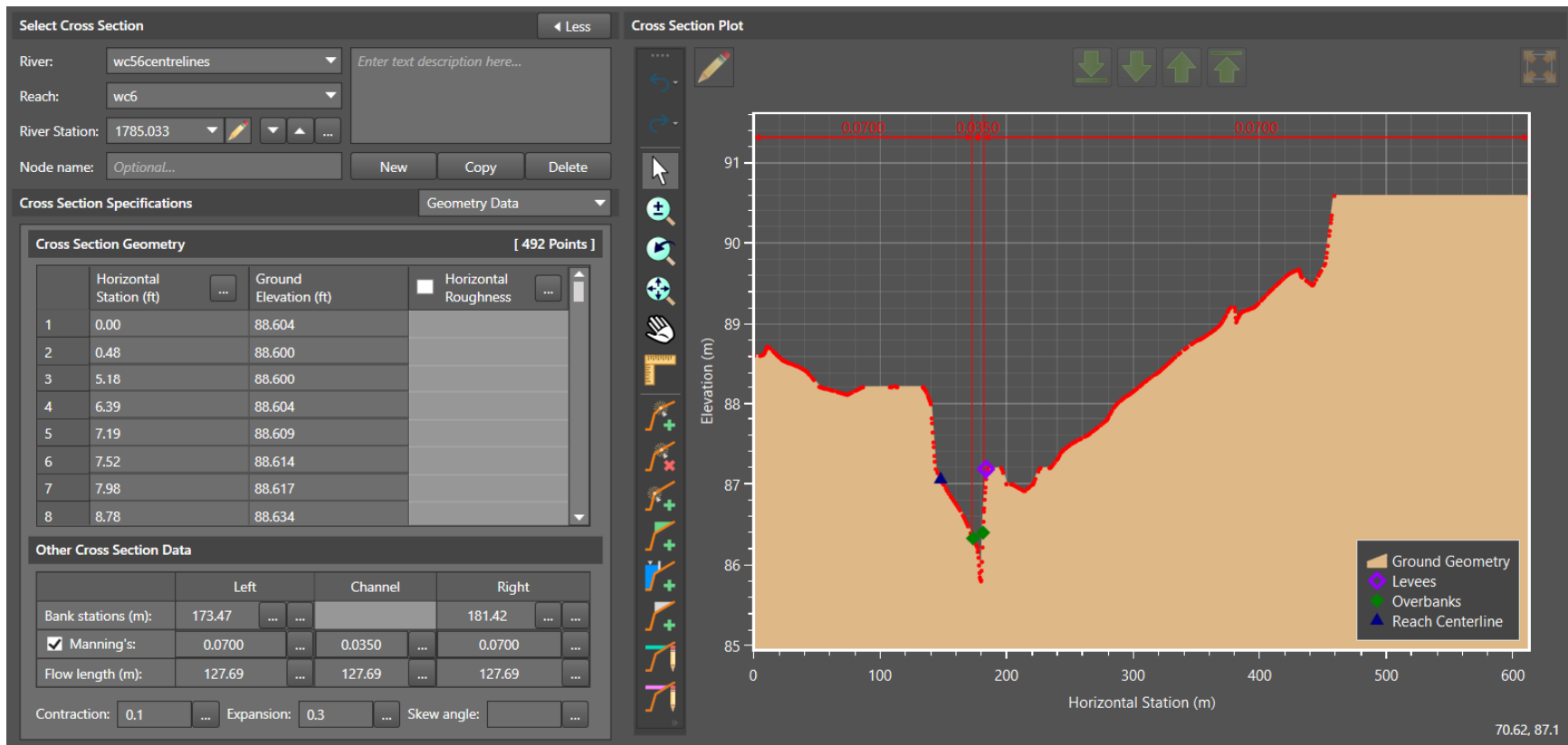
# Cross Section Schematic – Within Block 1



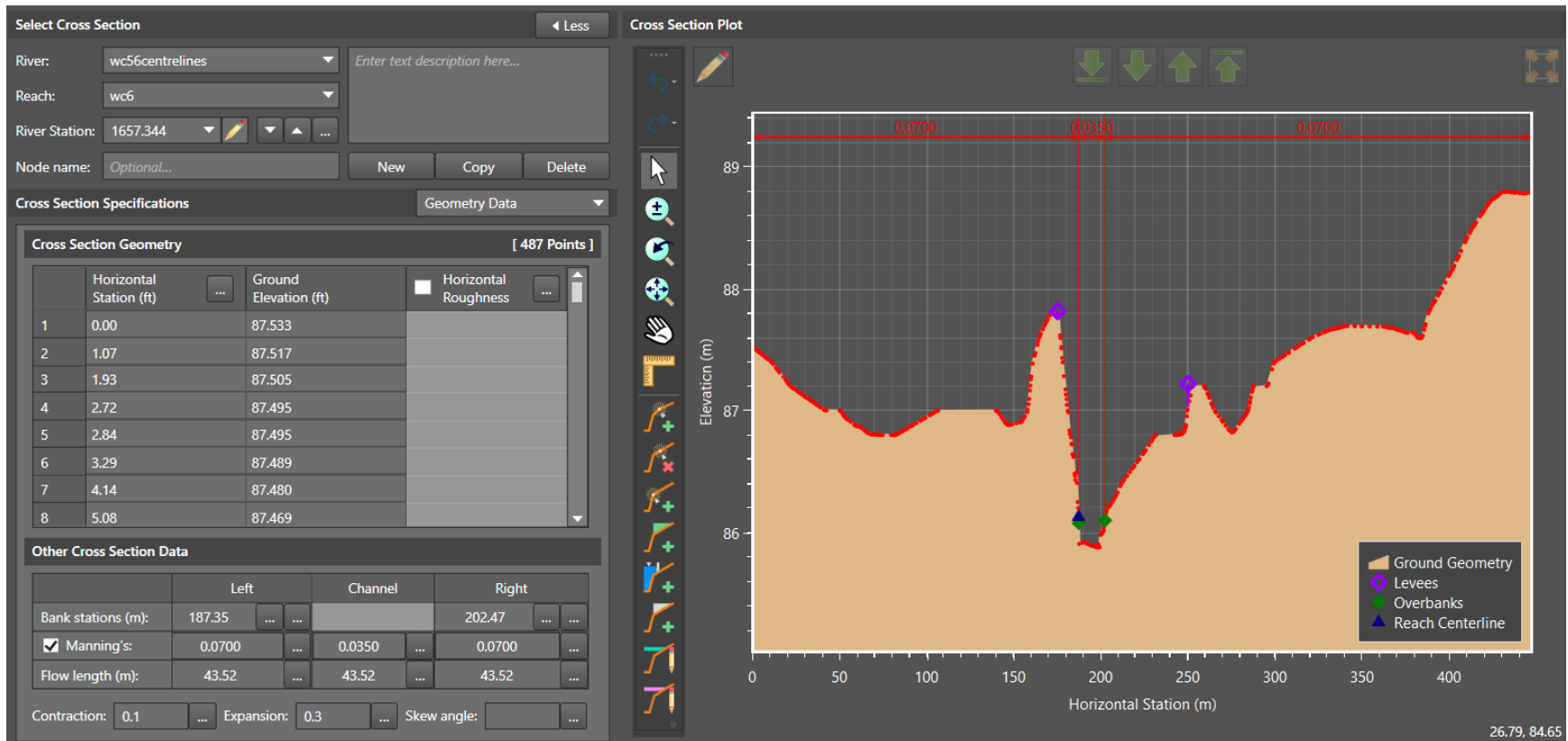
# Cross Section Schematic – Within Block 1



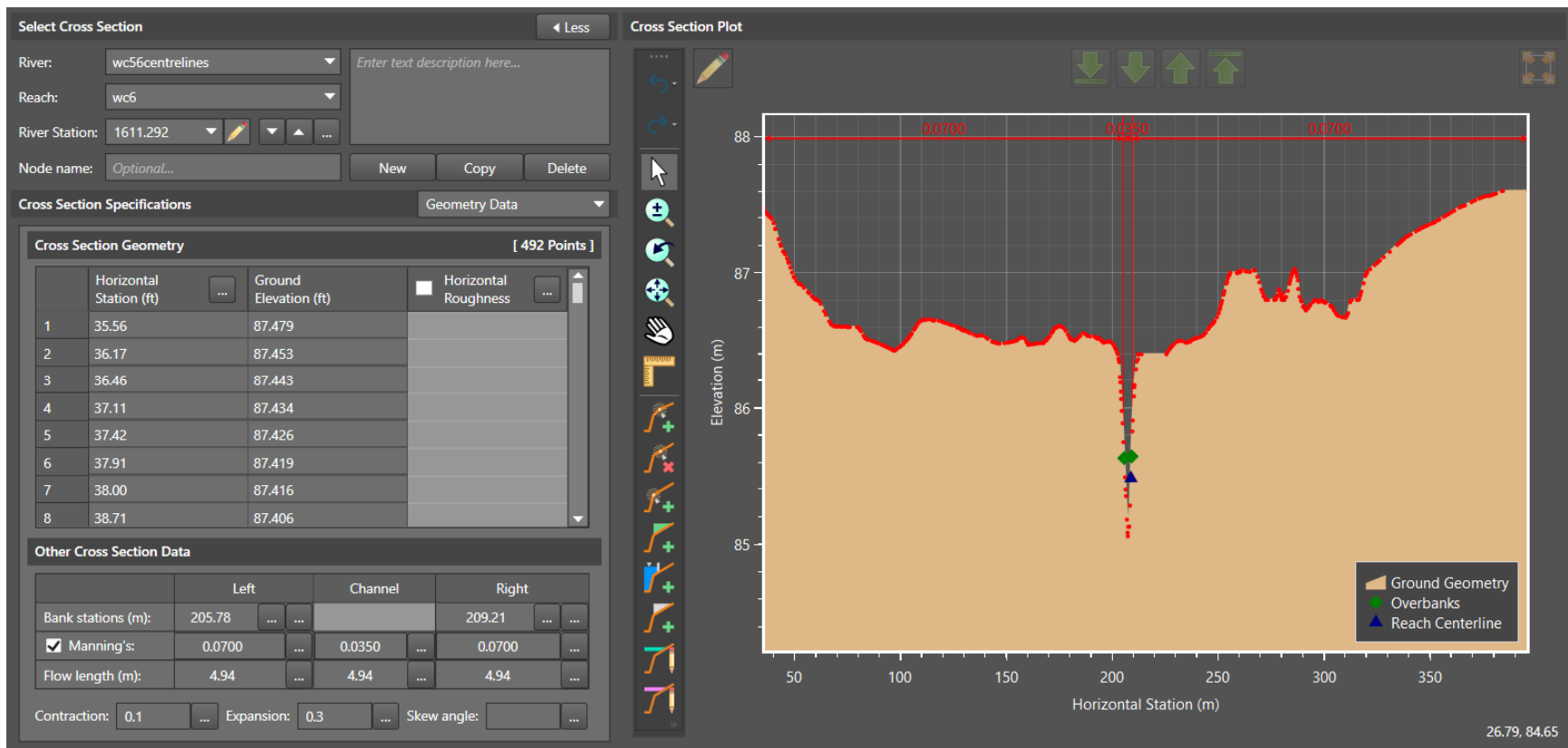
# Cross Section Schematic – Within Block 1



# Cross Section Schematic – Within Block 1

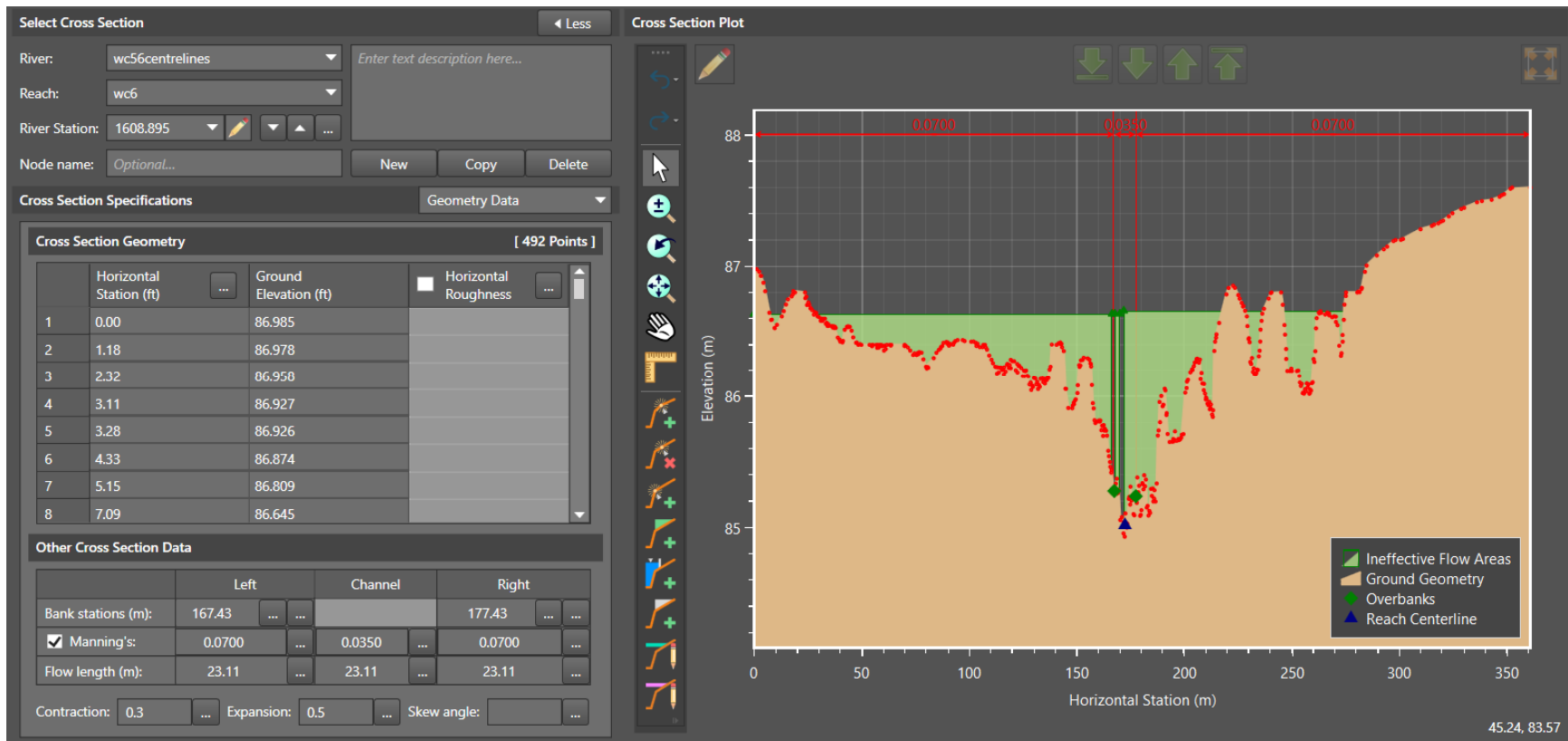


# Cross Section Schematic – Within Block 1





# Cross Section Schematic – Within Block 1



HEC-RAS Plan: 2024-BSS1-RIP-EX River: wc5centreline Reach: wc5

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Volume
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		(1000 m3)
wc5	2388.964	100-Year	8.16	92.94	93.96	93.76	94.00	0.002234	1.08	15.34	39.54	0.40	93.96
wc5	2388.964	5-Year	3.27	92.94	93.50	93.50	93.66	0.018328	1.77	1.85	5.81	1.00	9.22
wc5	2388.964	2-Year	1.81	92.94	93.36	93.36	93.49	0.019642	1.61	1.12	4.24	1.00	5.58
wc5	2290	100-Year	8.16	92.11	93.61		93.68	0.002335	1.20	6.82	7.77	0.41	91.75
wc5	2290	5-Year	3.27	92.11	93.18		93.21	0.001663	0.84	3.88	5.80	0.33	8.94
wc5	2290	2-Year	1.81	92.11	92.95		92.97	0.001367	0.67	2.68	4.87	0.29	5.39
wc5	2256	100-Year	8.16	91.90	93.51		93.61	0.001971	1.38	6.66	9.56	0.36	91.52
wc5	2256	5-Year	3.27	91.90	93.14		93.17	0.000836	0.74	4.47	4.50	0.22	8.79
wc5	2256	2-Year	1.81	91.90	92.93		92.95	0.000511	0.51	3.57	4.01	0.17	5.28
wc5	2221	100-Year	8.16	92.21	93.48		93.53	0.001789	1.30	14.13	38.17	0.38	91.16
wc5	2221	5-Year	3.27	92.21	93.03		93.11	0.003821	1.37	3.84	14.62	0.51	8.65
wc5	2221	2-Year	1.81	92.21	92.83		92.90	0.004441	1.19	1.85	6.05	0.53	5.19
wc5	2198	100-Year	8.16	92.01	93.18	93.18	93.43	0.008645	2.65	5.45	12.41	0.83	90.93
wc5	2198	5-Year	3.27	92.01	92.81	92.73	92.98	0.008703	1.98	2.29	5.74	0.78	8.58
wc5	2198	2-Year	1.81	92.01	92.60	92.57	92.74	0.011423	1.75	1.27	4.01	0.83	5.15
wc5	2150	100-Year	8.16	91.44	92.57	92.56	92.85	0.011355	2.40	3.87	9.13	0.88	90.70
wc5	2150	5-Year	3.27	91.44	92.20	92.18	92.39	0.016129	1.94	1.88	3.98	0.95	8.48
wc5	2150	2-Year	1.81	91.44	92.09		92.19	0.009854	1.41	1.28	3.38	0.73	5.09
wc5	2068.437	100-Year	8.16	90.80	91.50	91.49	91.75	0.015841	2.67	5.59	22.02	1.06	90.31
wc5	2068.437	5-Year	3.27	90.80	91.34	91.30	91.43	0.008307	1.60	3.14	11.94	0.73	8.28
wc5	2068.437	2-Year	1.81	90.80	91.19	91.19	91.29	0.012142	1.51	1.60	8.66	0.83	4.97
wc5	2044.707	100-Year	8.16	90.00	91.08	91.08	91.20	0.005868	1.93	8.64	32.35	0.65	89.91
wc5	2044.707	5-Year	3.27	90.00	90.74	90.67	90.91	0.010396	1.87	1.86	4.52	0.80	8.14
wc5	2044.707	2-Year	1.81	90.00	90.58		90.69	0.009571	1.45	1.26	3.43	0.73	4.89
wc5	1986.134	100-Year	8.16	89.81	90.77	90.77	90.94	0.008295	2.20	6.51	19.13	0.78	89.71
wc5	1986.134	5-Year	3.27	89.81	90.54	90.47	90.67	0.007338	1.67	2.73	14.68	0.69	8.08
wc5	1986.134	2-Year	1.81	89.81	90.41		90.49	0.005909	1.26	1.54	5.38	0.60	4.85
wc5	1901.030	100-Year	8.16	89.26	90.53	90.24	90.56	0.001619	1.17	14.29	31.94	0.36	88.84
wc5	1901.030	5-Year	3.27	89.26	90.04	89.96	90.14	0.005413	1.45	3.35	13.34	0.60	7.82
wc5	1901.030	2-Year	1.81	89.26	89.87	89.77	89.95	0.006875	1.30	1.59	6.88	0.64	4.72
wc5	1874.583	100-Year	8.16	89.05	89.98	89.96	90.42	0.016972	3.26	3.46	6.52	1.14	88.61
wc5	1874.583	5-Year	3.27	89.05	89.69	89.69	89.91	0.013378	2.19	1.85	4.81	0.94	7.76
wc5	1874.583	2-Year	1.81	89.05	89.53	89.53	89.69	0.014816	1.83	1.14	4.01	0.93	4.68
wc5	1801.453	100-Year	8.16	88.41	89.35	89.35	89.54	0.007587	2.16	5.97	18.64	0.76	88.26
wc5	1801.453	5-Year	3.27	88.41	89.10	89.10	89.19	0.005403	1.43	2.79	7.41	0.60	7.58
wc5	1801.453	2-Year	1.81	88.41	88.95		89.01	0.004835	1.12	1.81	5.78	0.54	4.58
wc5	1693.967	100-Year	8.16	88.01	88.92		88.99	0.004456	1.49	10.19	33.52	0.57	87.62
wc5	1693.967	5-Year	3.27	88.01	88.70	88.65	88.77	0.005125	1.25	4.08	25.09	0.57	7.31
wc5	1693.967	2-Year	1.81	88.01	88.61		88.66	0.004178	0.98	2.05	15.36	0.50	4.42
wc5	1602.883	100-Year	8.16	87.16	88.09	88.09	88.25	0.009300	2.29	8.13	37.77	0.82	86.54
wc5	1602.883	5-Year	3.27	87.16	87.91	87.91	88.03	0.007732	1.75	3.26	17.76	0.71	6.88
wc5	1602.883	2-Year	1.81	87.16	87.69	87.67	87.84	0.013414	1.73	1.24	4.91	0.87	4.23
wc5	1537.467	100-Year	8.16	86.82	87.87		87.90	0.001795	1.14	19.05	59.23	0.38	85.66
wc5	1537.467	5-Year	3.27	86.82	87.70		87.71	0.001281	0.84	10.06	43.65	0.31	6.45
wc5	1537.467	2-Year	1.81	86.82	87.58		87.59	0.001372	0.78	5.44	31.78	0.31	4.01
wc5	1471.795	100-Year	8.16	86.81	87.55	87.55	87.64	0.012022	2.36	9.19	40.49	0.91	84.73
wc5	1471.795	5-Year	3.27	86.81	87.38	87.38	87.50	0.015066	2.19	3.53	20.83	0.97	6.00
wc5	1471.795	2-Year	1.81	86.81	87.33	87.33	87.40	0.009301	1.60	2.52	17.74	0.75	3.75
wc5	1439.675	100-Year	8.16	86.80	87.42		87.43	0.001272	0.72	22.44	59.85	0.30	84.23
wc5	1439.675	5-Year	3.27	86.80	87.19		87.20	0.002122	0.67	9.89	45.11	0.35	5.79
wc5	1439.675	2-Year	1.81	86.80	87.10		87.11	0.002836	0.64	6.05	40.89	0.39	3.62
wc5	1320.692	100-Year	10.24	85.80	86.94	86.94	87.14	0.007117	2.51	8.56	23.58	0.77	82.73
wc5	1320.692	5-Year	4.06	85.80	86.52	86.52	86.74	0.011321	2.28	2.51	6.48	0.89	5.19
wc5	1320.692	2-Year	2.30	85.80	86.33	86.33	86.51	0.014076	2.02	1.43	4.58	0.94	3.25
wc5	1316.508	100-Year	10.24	85.26	86.65	86.38	86.83	0.005094	1.88	5.55	6.60	0.61	82.54
wc5	1316.508	5-Year	4.06	85.26	86.22	85.95	86.31	0.004548	1.32	3.07	4.92	0.53	5.11
wc5	1316.508	2-Year	2.30	85.26	86.00	85.77	86.07	0.004089	1.09	2.11	4.16	0.49	3.21
wc5	1291.617	100-Year	10.24	85.21	86.42		86.66	0.007900	2.17	4.78	6.14	0.75	82.41
wc5	1291.617	5-Year	4.06	85.21	86.02		86.15	0.008119	1.60	2.53	4.79	0.70	5.04
wc5	1291.617	2-Year	2.30	85.21	85.82		85.92	0.008297	1.39	1.66	3.98	0.69	3.16
wc5	1288.054	100-Year	10.24	85.00	86.24		86.47	0.007430	2.13	4.83	5.69	0.73	82.29
wc5	1288.054	5-Year	4.06	85.00	85.83		85.95	0.007307	1.55	2.63	4.82	0.67	4.98

HEC-RAS Plan: 2024-BSS1-RIP-EX River: wc5centreline Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Volume
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		(1000 m3)
wc5	1288.054	2-Year	2.30	85.00	85.63		85.72	0.007293	1.33	1.73	4.01	0.65	3.12
wc5	1225.493	100-Year	10.24	84.72	85.95		86.18	0.007607	2.14	4.86	6.42	0.74	82.10
wc5	1225.493	5-Year	4.06	84.72	85.54		85.67	0.007599	1.57	2.59	4.79	0.68	4.88
wc5	1225.493	2-Year	2.30	84.72	85.34		85.43	0.007602	1.35	1.71	3.99	0.66	3.05
wc5	1157.883	100-Year	10.24	84.21	85.44		85.67	0.007425	2.12	4.95	6.91	0.73	81.77
wc5	1157.883	5-Year	4.06	84.21	85.04		85.16	0.007397	1.55	2.61	4.81	0.67	4.70
wc5	1157.883	2-Year	2.30	84.21	84.84		84.93	0.007425	1.34	1.72	4.00	0.65	2.93
wc5	1131.031	100-Year	10.24	84.01	85.26		85.48	0.006990	2.08	5.13	7.69	0.71	81.64
wc5	1131.031	5-Year	4.06	84.01	84.84		84.96	0.007156	1.53	2.65	4.84	0.66	4.63
wc5	1131.031	2-Year	2.30	84.01	84.64		84.73	0.007098	1.32	1.75	4.03	0.64	2.89
wc5	1112.568	100-Year	10.24	83.88	85.11	84.96	85.34	0.007464	2.13	4.94	6.93	0.73	81.54
wc5	1112.568	5-Year	4.06	83.88	84.70	84.55	84.83	0.007575	1.57	2.59	4.79	0.68	4.58
wc5	1112.568	2-Year	2.30	83.88	84.50	84.38	84.60	0.007569	1.35	1.71	3.99	0.66	2.86
wc5	1071.480	100-Year	10.24	83.57	84.81	84.64	85.04	0.007360	2.12	4.89	6.17	0.72	81.34
wc5	1071.480	5-Year	4.06	83.57	84.40		84.52	0.007488	1.56	2.60	4.80	0.68	4.48
wc5	1071.480	2-Year	2.30	83.57	84.19		84.29	0.007519	1.34	1.71	3.99	0.66	2.79
wc5	1034.499	100-Year	10.24	83.29	84.56	84.36	84.77	0.006533	2.05	5.05	5.99	0.69	81.16
wc5	1034.499	5-Year	4.06	83.29	84.12	83.96	84.24	0.007154	1.53	2.65	4.84	0.66	4.38
wc5	1034.499	2-Year	2.30	83.29	83.92	83.79	84.01	0.007199	1.32	1.74	4.02	0.64	2.72
wc5	1013.774	100-Year	10.24	83.14	84.21	84.21	84.56	0.014820	2.62	3.92	6.05	0.99	81.06
wc5	1013.774	5-Year	4.06	83.14	83.89	83.81	84.05	0.011374	1.82	2.23	4.48	0.82	4.33
wc5	1013.774	2-Year	2.30	83.14	83.77	83.64	83.86	0.007233	1.32	1.74	4.02	0.64	2.68
wc5	951.8970	100-Year	12.42	82.62	84.17	83.80	84.18	0.000628	0.72	38.76	154.84	0.22	79.73
wc5	951.8970	5-Year	4.98	82.62	83.69	83.39	83.74	0.002624	1.07	7.05	32.05	0.41	4.04
wc5	951.8970	2-Year	2.91	82.62	83.43	83.20	83.50	0.004761	1.23	2.40	6.69	0.54	2.56
wc5	942.8887	100-Year	12.42	82.59	83.81	83.79	84.14	0.011286	2.59	5.34	20.97	0.89	79.60
wc5	942.8887	5-Year	4.98	82.59	83.62	83.34	83.71	0.004322	1.36	3.68	6.17	0.53	4.01
wc5	942.8887	2-Year	2.91	82.59	83.41	83.15	83.47	0.003991	1.13	2.57	4.77	0.49	2.54
wc5	931	100-Year	12.42	82.47	83.83	83.83	83.92	0.003442	1.58	16.60	88.57	0.51	79.30
wc5	931	5-Year	4.98	82.47	83.51	83.22	83.60	0.004182	1.34	3.73	7.09	0.52	3.91
wc5	931	2-Year	2.91	82.47	83.31	83.03	83.37	0.003589	1.09	2.67	4.86	0.47	2.47
wc5	918.3739	100-Year	12.42	82.41	83.57	83.57	83.57	0.000037	0.13	112.46	173.67	0.05	78.46
wc5	918.3739	5-Year	4.98	82.41	83.38	83.26	83.52	0.008537	1.64	3.05	5.80	0.72	3.86
wc5	918.3739	2-Year	2.91	82.41	83.16	83.10	83.28	0.012116	1.57	1.85	4.88	0.82	2.44
wc5	815.3577	100-Year	12.42	81.85	83.06	83.06	83.40	0.015135	2.56	4.85	7.25	1.00	73.18
wc5	815.3577	5-Year	4.98	81.85	82.96	82.60	83.03	0.003504	1.20	4.14	6.39	0.48	3.54
wc5	815.3577	2-Year	2.91	81.85	82.73	82.41	82.78	0.003007	1.02	2.85	5.00	0.43	2.23
wc5	680.8133	100-Year	14.83	81.64	83.25	82.91	83.25	0.000002	0.04	395.78	276.93	0.01	66.37
wc5	680.8133	5-Year	5.96	81.64	82.84	82.46	82.92	0.002948	1.30	4.62	5.93	0.45	3.39
wc5	680.8133	2-Year	3.47	81.64	82.63	82.26	82.69	0.002506	1.00	3.47	5.48	0.40	2.12
wc5	678.6898	100-Year	14.83	81.55	83.25	82.82	83.25	0.000001	0.03	464.38	276.46	0.01	60.57
wc5	678.6898	5-Year	5.96	81.55	82.81	82.37	82.88	0.002304	1.21	4.98	5.94	0.41	3.33
wc5	678.6898	2-Year	3.47	81.55	82.61	82.17	82.65	0.001787	0.90	3.85	5.61	0.34	2.07
wc5	665	100-Year	14.83	81.40	83.25	82.74	83.25	0.000085	0.28	98.34	178.37	0.08	37.21
wc5	665	5-Year	5.96	81.40	82.60	82.34	82.65	0.003169	1.02	7.13	40.79	0.45	2.82
wc5	665	2-Year	3.47	81.40	82.33	82.18	82.40	0.006458	1.17	2.96	7.77	0.61	1.79
wc5	660	100-Year	14.83	81.32	82.82	82.82	83.21	0.015358	2.79	5.32	6.75	1.00	37.06
wc5	660	5-Year	5.96	81.32	82.34	82.34	82.61	0.017084	2.30	2.59	4.79	1.00	2.81
wc5	660	2-Year	3.47	81.32	82.14	82.14	82.35	0.018522	2.06	1.68	3.93	1.01	1.78
wc5	651.8919	100-Year	14.83	80.93	82.23	82.23	82.23	0.000002	0.04	482.17	350.02	0.01	30.79
wc5	651.8919	5-Year	5.96	80.93	81.98	81.75	82.10	0.005734	1.59	3.85	9.19	0.61	2.73
wc5	651.8919	2-Year	3.47	80.93	81.73	81.55	81.83	0.006161	1.39	2.49	4.71	0.61	1.73
wc5	648.3854	100-Year	14.83	80.78	81.93	81.93	81.93	0.000006	0.05	349.42	355.19	0.02	20.82
wc5	648.3854	5-Year	5.96	80.78	81.61	81.61	81.87	0.016158	2.29	2.80	4.80	0.99	2.65
wc5	648.3854	2-Year	3.47	80.78	81.45	81.40	81.62	0.012434	1.80	1.92	4.20	0.85	1.68
wc5	553.6066	100-Year	14.83	80.14	81.80	81.31	81.81	0.000675	0.68	42.56	151.61	0.23	6.70
wc5	553.6066	5-Year	5.96	80.14	81.24	80.96	81.30	0.003494	1.08	5.52	10.52	0.48	2.36
wc5	553.6066	2-Year	3.47	80.14	80.97	80.79	81.04	0.005222	1.11	3.11	7.64	0.56	1.50
wc5	521.5115	100-Year	14.83	80.04	81.65	81.43	81.78	0.003163	1.76	14.34	42.14	0.50	6.28
wc5	521.5115	5-Year	5.96	80.04	81.11	80.86	81.23	0.005200	1.54	3.89	6.44	0.59	2.29
wc5	521.5115	2-Year	3.47	80.04	80.86	80.66	80.95	0.005716	1.35	2.56	4.77	0.59	1.45

HEC-RAS Plan: 2024-BSS1-RIP-EX River: wc5centreline Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl	Volume
			(m3/s)	(m)	(m)	(m)	(m)	(m/m)	(m/s)	(m2)	(m)		(1000 m3)
wc5	518.7136	100-Year	15.40	79.98	81.33	81.33	81.71	0.010670	2.77	6.16	11.24	0.89	6.18
wc5	518.7136	5-Year	6.64	79.98	80.85	80.85	81.13	0.015997	2.35	2.83	4.99	1.00	2.26
wc5	518.7136	2-Year	3.86	79.98	80.70	80.64	80.87	0.011590	1.81	2.13	4.40	0.83	1.43
wc5	487.5449	100-Year	15.40	79.68	80.81	80.78	81.07	0.009674	2.37	7.52	13.71	0.84	5.87
wc5	487.5449	5-Year	6.64	79.68	80.64	80.42	80.73	0.004152	1.35	5.46	11.65	0.53	2.07
wc5	487.5449	2-Year	3.86	79.68	80.43	80.25	80.50	0.005135	1.21	3.21	8.71	0.56	1.31
wc5	484.1846	100-Year	15.40	79.63	80.92	80.77	80.98	0.002222	1.27	21.45	60.51	0.42	5.77
wc5	484.1846	5-Year	6.64	79.63	80.62	80.37	80.70	0.003636	1.27	6.77	36.10	0.50	2.02
wc5	484.1846	2-Year	3.86	79.63	80.40	80.20	80.47	0.004908	1.18	3.28	7.16	0.55	1.29
wc5	381.2556	100-Year	15.40	79.11	80.73	80.40	80.80	0.002218	1.48	22.98	74.84	0.42	4.04
wc5	381.2556	5-Year	6.64	79.11	80.31	79.98	80.41	0.003656	1.45	4.59	5.57	0.51	1.58
wc5	381.2556	2-Year	3.86	79.11	80.04	79.77	80.12	0.004132	1.24	3.12	5.22	0.51	1.04
wc5	359.8282	100-Year	15.40	78.85	80.52	80.52	80.67	0.004641	1.95	15.42	61.61	0.58	3.26
wc5	359.8282	5-Year	6.64	78.85	80.02	79.82	80.20	0.007672	1.88	3.52	4.68	0.69	1.42
wc5	359.8282	2-Year	3.86	78.85	79.79	79.58	79.91	0.006466	1.54	2.51	4.03	0.62	0.92
wc5	304.0528	100-Year	15.40	78.22	79.67	79.67	79.98	0.010553	2.63	7.18	12.55	0.88	2.50
wc5	304.0528	5-Year	6.64	78.22	79.32	79.32	79.54	0.012774	2.12	3.39	9.16	0.89	1.18
wc5	304.0528	2-Year	3.86	78.22	79.12	79.08	79.30	0.013288	1.86	2.08	4.57	0.88	0.77
wc5	250	100-Year	15.40	77.55	78.75	78.75	79.13	0.014590	2.70	5.70	7.79	1.01	2.12
wc5	250	5-Year	6.64	77.55	78.37	78.37	78.61	0.016056	2.20	3.02	6.10	1.00	0.99
wc5	250	2-Year	3.86	77.55	78.19	78.19	78.38	0.017847	1.94	1.99	5.33	1.01	0.65
wc5	230	100-Year	15.40	76.75	78.69		78.75	0.001242	1.03	15.29	18.79	0.32	1.92
wc5	230	5-Year	6.64	76.75	78.04		78.09	0.001906	0.95	7.01	10.26	0.37	0.90
wc5	230	2-Year	3.86	76.75	77.78		77.82	0.002250	0.86	4.51	8.74	0.38	0.59
wc5	200	100-Year	15.40	76.48	78.55		78.62	0.000974	1.22	15.04	13.67	0.30	0.17
wc5	200	5-Year	6.64	76.48	77.86		77.91	0.001295	0.99	7.17	9.24	0.32	0.08
wc5	200	2-Year	3.86	76.48	77.58		77.61	0.001454	0.83	4.76	7.85	0.32	0.05
wc5	170	100-Year	15.40	76.48	78.57	77.53	78.60	0.000411	0.81	22.79	18.27	0.20	0.08
wc5	170	5-Year	6.64	76.48	77.88	77.23	77.90	0.000588	0.68	10.43	13.27	0.22	0.04
wc5	170	2-Year	3.86	76.48	77.59	77.08	77.60	0.000669	0.57	6.88	11.17	0.22	0.02

HEC-RAS Plan: 2024-BSS1-RIP-PR River: wc5centrelines Reach: wc5

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	2388.964	100-Year	8.16	92.94	93.94	93.76	93.98	0.002530	1.13	14.57	39.00	0.43
wc5	2388.964	5-Year	3.27	92.94	93.62	93.50	93.69	0.006215	1.20	3.63	27.74	0.61
wc5	2388.964	2-Year	1.81	92.94	93.48	93.36	93.53	0.006840	1.06	1.71	5.54	0.61
wc5	2290	100-Year	8.16	92.11	93.33		93.47	0.005942	1.70	4.79	6.47	0.63
wc5	2290	5-Year	3.27	92.11	92.83		92.95	0.008402	1.54	2.13	4.39	0.71
wc5	2290	2-Year	1.81	92.11	92.62		92.72	0.010061	1.40	1.29	3.55	0.74
wc5	2256	100-Year	8.16	91.90	92.98		93.22	0.008864	2.18	3.76	4.12	0.71
wc5	2256	5-Year	3.27	91.90	92.63		92.72	0.005367	1.36	2.40	3.66	0.54
wc5	2256	2-Year	1.81	91.90	92.45		92.51	0.003876	1.01	1.79	3.50	0.45
wc5	2221	100-Year	8.16	91.58	92.71		92.93	0.007483	2.06	4.07	5.36	0.65
wc5	2221	5-Year	3.27	91.58	92.54		92.59	0.002171	0.99	3.29	3.85	0.34
wc5	2221	2-Year	1.81	91.58	92.41		92.43	0.001054	0.65	2.80	3.74	0.24
wc5	2198	100-Year	8.16	91.82	92.58	92.58	92.74	0.011058	2.17	7.88	24.51	0.87
wc5	2198	5-Year	3.27	91.82	92.41	92.41	92.51	0.009047	1.58	3.74	22.33	0.75
wc5	2198	2-Year	1.81	91.82	92.27	92.25	92.38	0.012451	1.46	1.45	10.28	0.82
wc5	2150	100-Year	8.16	91.45	92.20	92.18	92.33	0.009072	1.99	8.77	26.70	0.79
wc5	2150	5-Year	3.27	91.45	92.00	92.00	92.10	0.008847	1.54	3.87	22.82	0.74
wc5	2150	2-Year	1.81	91.45	91.91	91.85	91.98	0.008062	1.25	1.99	15.11	0.68
wc5	2068.437	100-Year	8.16	90.60	91.31	91.31	91.47	0.010743	2.18	8.08	24.84	0.87
wc5	2068.437	5-Year	3.27	90.60	91.11	91.11	91.23	0.011351	1.72	3.35	18.27	0.84
wc5	2068.437	2-Year	1.81	90.60	90.99	90.98	91.09	0.013285	1.49	1.64	10.17	0.86
wc5	2044.707	100-Year	8.16	90.00	90.76		90.88	0.007624	1.79	8.35	24.81	0.73
wc5	2044.707	5-Year	3.27	90.00	90.56	90.50	90.64	0.007158	1.33	3.63	20.53	0.66
wc5	2044.707	2-Year	1.81	90.00	90.44		90.50	0.008187	1.13	1.76	10.32	0.67
wc5	1986.134	100-Year	8.16	89.80	90.49	90.49	90.65	0.010684	2.13	7.91	24.46	0.86
wc5	1986.134	5-Year	3.27	89.80	90.28	90.28	90.41	0.011771	1.70	3.21	17.33	0.85
wc5	1986.134	2-Year	1.81	89.80	90.19	90.16	90.27	0.009788	1.31	1.90	11.84	0.74
wc5	1901.030	100-Year	8.16	88.80	89.49	89.49	89.64	0.010397	2.13	7.85	24.30	0.85
wc5	1901.030	5-Year	3.27	88.80	89.28	89.28	89.40	0.010747	1.66	3.23	18.58	0.81
wc5	1901.030	2-Year	1.81	88.80	89.14	89.14	89.26	0.015868	1.54	1.34	8.29	0.92
wc5	1874.583	100-Year	8.16	88.20	88.99		89.08	0.006042	1.77	10.28	25.63	0.66
wc5	1874.583	5-Year	3.27	88.20	88.75		88.82	0.006309	1.39	4.74	21.04	0.64
wc5	1874.583	2-Year	1.81	88.20	88.63	88.58	88.70	0.006968	1.22	2.50	16.57	0.64
wc5	1801.453	100-Year	8.16	87.80	88.63		88.72	0.004771	1.63	10.78	25.41	0.60
wc5	1801.453	5-Year	3.27	87.80	88.40		88.46	0.004561	1.25	5.12	22.98	0.55
wc5	1801.453	2-Year	1.81	87.80	88.28		88.33	0.004234	1.02	2.81	15.60	0.51
wc5	1693.967	100-Year	8.16	87.47	88.31		88.38	0.005131	1.59	10.81	25.50	0.61
wc5	1693.967	5-Year	3.27	87.47	88.08		88.14	0.005142	1.22	5.28	23.42	0.57
wc5	1693.967	2-Year	1.81	87.47	87.99		88.03	0.004695	1.01	3.11	21.72	0.52
wc5	1602.883	100-Year	8.16	87.00	87.76		87.82	0.004465	1.52	11.53	25.75	0.57
wc5	1602.883	5-Year	3.27	87.00	87.52		87.57	0.004658	1.18	5.64	23.14	0.55
wc5	1602.883	2-Year	1.81	87.00	87.40		87.45	0.005366	1.05	3.10	21.00	0.56
wc5	1537.467	100-Year	8.16	86.60	87.35		87.46	0.007114	1.85	9.59	25.11	0.72
wc5	1537.467	5-Year	3.27	86.60	87.15		87.22	0.006210	1.37	4.74	21.44	0.63
wc5	1537.467	2-Year	1.81	86.60	87.05		87.10	0.005496	1.09	2.81	16.08	0.57
wc5	1471.795	100-Year	8.16	86.20	87.06		87.12	0.003523	1.33	11.83	28.48	0.51
wc5	1471.795	5-Year	3.27	86.20	86.79		86.85	0.004941	1.14	4.62	24.92	0.55
wc5	1471.795	2-Year	1.81	86.20	86.67		86.72	0.005803	0.99	2.17	14.17	0.57
wc5	1439.675	100-Year	8.16	86.00	86.98		87.02	0.002164	1.20	14.87	29.75	0.41
wc5	1439.675	5-Year	3.27	86.00	86.61		86.68	0.005126	1.28	4.57	25.09	0.57
wc5	1439.675	2-Year	1.81	86.00	86.54		86.58	0.003044	0.90	2.98	19.35	0.43
wc5	1320.692	100-Year	10.24	85.60	86.87		86.90	0.001091	1.02	21.45	28.69	0.30
wc5	1320.692	5-Year	4.06	85.60	86.36		86.40	0.002456	1.03	7.83	24.56	0.41
wc5	1320.692	2-Year	2.30	85.60	86.13	86.05	86.20	0.006501	1.25	2.62	16.82	0.62
wc5	1316.508	100-Year	10.24	85.26	86.65	86.38	86.83	0.005094	1.88	5.55	6.60	0.61
wc5	1316.508	5-Year	4.06	85.26	86.22	85.95	86.31	0.004548	1.32	3.07	4.92	0.53
wc5	1316.508	2-Year	2.30	85.26	86.00	85.77	86.07	0.004089	1.09	2.11	4.16	0.49
wc5	1291.617	100-Year	10.24	85.21	86.42		86.66	0.007900	2.17	4.78	6.14	0.75

HEC-RAS Plan: 2024-BSS1-RIP-PR River: wc56centrelines Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	1291.617	5-Year	4.06	85.21	86.02		86.15	0.008119	1.60	2.53	4.79	0.70
wc5	1291.617	2-Year	2.30	85.21	85.82		85.92	0.008297	1.39	1.66	3.98	0.69
wc5	1288.054	100-Year	10.24	85.00	86.24		86.47	0.007430	2.13	4.83	5.69	0.73
wc5	1288.054	5-Year	4.06	85.00	85.83		85.95	0.007307	1.55	2.63	4.82	0.67
wc5	1288.054	2-Year	2.30	85.00	85.63		85.72	0.007293	1.33	1.73	4.01	0.65
wc5	1225.493	100-Year	10.24	84.72	85.95		86.18	0.007607	2.14	4.86	6.42	0.74
wc5	1225.493	5-Year	4.06	84.72	85.54		85.67	0.007599	1.57	2.59	4.79	0.68
wc5	1225.493	2-Year	2.30	84.72	85.34		85.43	0.007602	1.35	1.71	3.99	0.66
wc5	1157.883	100-Year	10.24	84.21	85.44		85.67	0.007425	2.12	4.95	6.91	0.73
wc5	1157.883	5-Year	4.06	84.21	85.04		85.16	0.007397	1.55	2.61	4.81	0.67
wc5	1157.883	2-Year	2.30	84.21	84.84		84.93	0.007425	1.34	1.72	4.00	0.65
wc5	1131.031	100-Year	10.24	84.01	85.26		85.48	0.006990	2.08	5.13	7.69	0.71
wc5	1131.031	5-Year	4.06	84.01	84.84		84.96	0.007156	1.53	2.65	4.84	0.66
wc5	1131.031	2-Year	2.30	84.01	84.64		84.73	0.007098	1.32	1.75	4.03	0.64
wc5	1112.568	100-Year	10.24	83.88	85.11	84.96	85.34	0.007464	2.13	4.94	6.93	0.73
wc5	1112.568	5-Year	4.06	83.88	84.70	84.55	84.83	0.007575	1.57	2.59	4.79	0.68
wc5	1112.568	2-Year	2.30	83.88	84.50	84.38	84.60	0.007569	1.35	1.71	3.99	0.66
wc5	1071.480	100-Year	10.24	83.57	84.81	84.64	85.04	0.007360	2.12	4.89	6.17	0.72
wc5	1071.480	5-Year	4.06	83.57	84.40		84.52	0.007488	1.56	2.60	4.80	0.68
wc5	1071.480	2-Year	2.30	83.57	84.19		84.29	0.007519	1.34	1.71	3.99	0.66
wc5	1034.499	100-Year	10.24	83.29	84.56	84.36	84.77	0.006533	2.05	5.05	5.99	0.69
wc5	1034.499	5-Year	4.06	83.29	84.12	83.96	84.24	0.007154	1.53	2.65	4.84	0.66
wc5	1034.499	2-Year	2.30	83.29	83.92	83.79	84.01	0.007199	1.32	1.74	4.02	0.64
wc5	1013.774	100-Year	10.24	83.14	84.21	84.21	84.56	0.014820	2.62	3.92	6.05	0.99
wc5	1013.774	5-Year	4.06	83.14	83.89	83.81	84.05	0.011374	1.82	2.23	4.48	0.82
wc5	1013.774	2-Year	2.30	83.14	83.77	83.64	83.86	0.007233	1.32	1.74	4.02	0.64
wc5	951.8970	100-Year	12.42	82.62	84.17	83.80	84.18	0.000628	0.72	38.76	154.84	0.22
wc5	951.8970	5-Year	4.98	82.62	83.69	83.39	83.74	0.002624	1.07	7.05	32.05	0.41
wc5	951.8970	2-Year	2.91	82.62	83.43	83.20	83.50	0.004761	1.23	2.40	6.69	0.54
wc5	942.8887	100-Year	12.42	82.59	83.81	83.79	84.14	0.011286	2.59	5.34	20.97	0.89
wc5	942.8887	5-Year	4.98	82.59	83.62	83.34	83.71	0.004322	1.36	3.68	6.17	0.53
wc5	942.8887	2-Year	2.91	82.59	83.41	83.15	83.47	0.003991	1.13	2.57	4.77	0.49
wc5	931	100-Year	12.42	82.47	83.83	83.83	83.92	0.003442	1.58	16.60	88.57	0.51
wc5	931	5-Year	4.98	82.47	83.51	83.22	83.60	0.004182	1.34	3.73	7.09	0.52
wc5	931	2-Year	2.91	82.47	83.31	83.03	83.37	0.003589	1.09	2.67	4.86	0.47
wc5	918.3739	100-Year	12.42	82.41	83.57	83.57	83.57	0.000037	0.13	112.46	173.67	0.05
wc5	918.3739	5-Year	4.98	82.41	83.38	83.26	83.52	0.008537	1.64	3.05	5.80	0.72
wc5	918.3739	2-Year	2.91	82.41	83.16	83.10	83.28	0.012116	1.57	1.85	4.88	0.82
wc5	815.3577	100-Year	12.42	81.85	83.06	83.06	83.40	0.015135	2.56	4.85	7.25	1.00
wc5	815.3577	5-Year	4.98	81.85	82.96	82.60	83.03	0.003504	1.20	4.14	6.39	0.48
wc5	815.3577	2-Year	2.91	81.85	82.73	82.41	82.78	0.003007	1.02	2.85	5.00	0.43
wc5	680.8133	100-Year	14.83	81.64	83.25	82.91	83.25	0.000002	0.04	395.78	276.93	0.01
wc5	680.8133	5-Year	5.96	81.64	82.84	82.46	82.92	0.002948	1.30	4.62	5.93	0.45
wc5	680.8133	2-Year	3.47	81.64	82.63	82.26	82.69	0.002506	1.00	3.47	5.48	0.40
wc5	678.6898	100-Year	14.83	81.55	83.25	82.82	83.25	0.000001	0.03	464.38	276.46	0.01
wc5	678.6898	5-Year	5.96	81.55	82.81	82.37	82.88	0.002304	1.21	4.98	5.94	0.41
wc5	678.6898	2-Year	3.47	81.55	82.61	82.17	82.65	0.001787	0.90	3.85	5.61	0.34
wc5	665	100-Year	14.83	81.40	83.25	82.74	83.25	0.000085	0.28	98.34	178.37	0.08
wc5	665	5-Year	5.96	81.40	82.60	82.34	82.65	0.003169	1.02	7.13	40.79	0.45
wc5	665	2-Year	3.47	81.40	82.33	82.18	82.40	0.006458	1.17	2.96	7.77	0.61
wc5	660	100-Year	14.83	81.32	82.82	82.82	83.21	0.015358	2.79	5.32	6.75	1.00
wc5	660	5-Year	5.96	81.32	82.34	82.34	82.61	0.017084	2.30	2.59	4.79	1.00
wc5	660	2-Year	3.47	81.32	82.14	82.14	82.35	0.018522	2.06	1.68	3.93	1.01
wc5	651.8919	100-Year	14.83	80.93	82.23	82.23	82.23	0.000002	0.04	482.17	350.02	0.01
wc5	651.8919	5-Year	5.96	80.93	81.98	81.75	82.10	0.005734	1.59	3.85	9.19	0.61
wc5	651.8919	2-Year	3.47	80.93	81.73	81.55	81.83	0.006161	1.39	2.49	4.71	0.61
wc5	648.3854	100-Year	14.83	80.78	81.93	81.93	81.93	0.000006	0.05	349.42	355.19	0.02
wc5	648.3854	5-Year	5.96	80.78	81.61	81.61	81.87	0.016158	2.29	2.60	4.80	0.99

HEC-RAS Plan: 2024-BSS1-RIP-PR River: wc56centrelines Reach: wc5 (Continued)

Reach	River Sta	Profile	Q Total (m3/s)	Min Ch El (m)	W.S. Elev (m)	Crit W.S. (m)	E.G. Elev (m)	E.G. Slope (m/m)	Vel Chnl (m/s)	Flow Area (m2)	Top Width (m)	Froude # Chl
wc5	648.3854	2-Year	3.47	80.78	81.45	81.40	81.62	0.012434	1.80	1.92	4.20	0.85
wc5	553.6066	100-Year	14.83	80.14	81.80	81.31	81.81	0.000675	0.68	42.56	151.61	0.23
wc5	553.6066	5-Year	5.96	80.14	81.24	80.96	81.30	0.003494	1.08	5.52	10.52	0.48
wc5	553.6066	2-Year	3.47	80.14	80.97	80.79	81.04	0.005222	1.11	3.11	7.64	0.56
wc5	521.5115	100-Year	14.83	80.04	81.65	81.43	81.78	0.003163	1.76	14.34	42.14	0.50
wc5	521.5115	5-Year	5.96	80.04	81.11	80.86	81.23	0.005200	1.54	3.89	6.44	0.59
wc5	521.5115	2-Year	3.47	80.04	80.86	80.66	80.95	0.005716	1.35	2.56	4.77	0.59
wc5	518.7136	100-Year	15.40	79.98	81.33	81.33	81.71	0.010670	2.77	6.16	11.24	0.89
wc5	518.7136	5-Year	6.64	79.98	80.85	80.85	81.13	0.015997	2.35	2.83	4.99	1.00
wc5	518.7136	2-Year	3.86	79.98	80.70	80.64	80.87	0.011590	1.81	2.13	4.40	0.83
wc5	487.5449	100-Year	15.40	79.68	80.81	80.78	81.07	0.009674	2.37	7.52	13.71	0.84
wc5	487.5449	5-Year	6.64	79.68	80.64	80.42	80.73	0.004152	1.35	5.46	11.65	0.53
wc5	487.5449	2-Year	3.86	79.68	80.43	80.25	80.50	0.005135	1.21	3.21	8.71	0.56
wc5	484.1846	100-Year	15.40	79.63	80.92	80.77	80.98	0.002222	1.27	21.45	60.51	0.42
wc5	484.1846	5-Year	6.64	79.63	80.62	80.37	80.70	0.003636	1.27	6.77	36.10	0.50
wc5	484.1846	2-Year	3.86	79.63	80.40	80.20	80.47	0.004908	1.18	3.28	7.16	0.55
wc5	381.2556	100-Year	15.40	79.11	80.73	80.40	80.80	0.002218	1.48	22.98	74.84	0.42
wc5	381.2556	5-Year	6.64	79.11	80.31	79.98	80.41	0.003656	1.45	4.59	5.57	0.51
wc5	381.2556	2-Year	3.86	79.11	80.04	79.77	80.12	0.004132	1.24	3.12	5.22	0.51
wc5	359.8282	100-Year	15.40	78.85	80.52	80.52	80.67	0.004641	1.95	15.42	61.61	0.58
wc5	359.8282	5-Year	6.64	78.85	80.02	79.82	80.20	0.007672	1.88	3.52	4.68	0.69
wc5	359.8282	2-Year	3.86	78.85	79.79	79.58	79.91	0.006466	1.54	2.51	4.03	0.62
wc5	304.0528	100-Year	15.40	78.22	79.67	79.67	79.98	0.010553	2.63	7.18	12.55	0.88
wc5	304.0528	5-Year	6.64	78.22	79.32	79.32	79.54	0.012774	2.12	3.39	9.16	0.89
wc5	304.0528	2-Year	3.86	78.22	79.12	79.08	79.30	0.013288	1.86	2.08	4.57	0.88
wc5	250	100-Year	15.40	77.55	78.75	78.75	79.13	0.014590	2.70	5.70	7.79	1.01
wc5	250	5-Year	6.64	77.55	78.37	78.37	78.61	0.016056	2.20	3.02	6.10	1.00
wc5	250	2-Year	3.86	77.55	78.19	78.19	78.38	0.017847	1.94	1.99	5.33	1.01
wc5	230	100-Year	15.40	76.75	78.69		78.75	0.001242	1.03	15.29	18.79	0.32
wc5	230	5-Year	6.64	76.75	78.04		78.09	0.001906	0.95	7.01	10.26	0.37
wc5	230	2-Year	3.86	76.75	77.78		77.82	0.002250	0.86	4.51	8.74	0.38
wc5	200	100-Year	15.40	76.48	78.55		78.62	0.000974	1.22	15.04	13.67	0.30
wc5	200	5-Year	6.64	76.48	77.86		77.91	0.001295	0.99	7.17	9.24	0.32
wc5	200	2-Year	3.86	76.48	77.58		77.61	0.001454	0.83	4.76	7.85	0.32
wc5	170	100-Year	15.40	76.48	78.57	77.53	78.60	0.000411	0.81	22.79	18.27	0.20
wc5	170	5-Year	6.64	76.48	77.88	77.23	77.90	0.000588	0.68	10.43	13.27	0.22
wc5	170	2-Year	3.86	76.48	77.59	77.08	77.60	0.000669	0.57	6.88	11.17	0.22