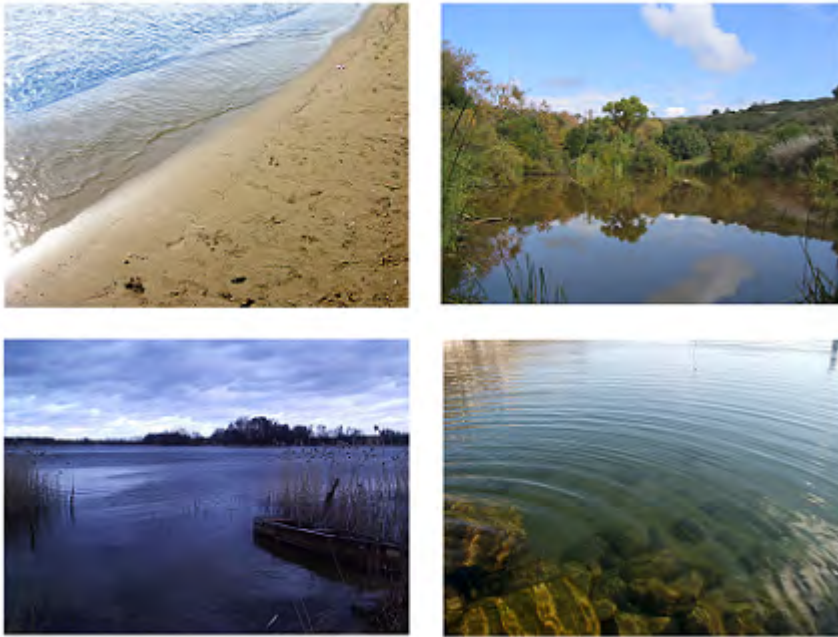


PRELIMINARY DRAINAGE STUDY



NEWLAND SIERRA PDS 2014 MPA-14-018 VOLUME 3 – FEBRUARY 2017

Prepared For: **Newland Sierra**

Prepared By: **Kenneth T. Kozlik**

Job Number: **02660.002.02**



APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 13

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2564	2563	2	1273	1271	80	0.54	0.16				
2563	2563.1	6	1271	1269	230	0.51	1.93	2 SIDES			
2563.1	2562	3	1266	1261	210						
2562	2562	1						1 OF 2			
2563.1	2563.2	2	1269	1268	65	0.51	0.55				
2563.2	2562	6	1268	1267	120	0.51	0.55	2 SIDES			
2562	2562	1						2 OF 2			
2562	2558	3	1261	1260	140						
2558	2558	10						SAVE TO BANK 2 - 2558			
2561	2560	2	1275	1274	50	0.51	0.13				
2560	2560.1	6	1274	1269	315	0.51	1.96	2 SIDES			
2560.1	2559	3	1263	1262	160						
2559	2559	1						1 OF 2			
2560.1	2560.2	2	1269	1268.8	50	0.51	0.4				
2560.2	2559	6	1268.8	1268	115	0.51	0.97	2 SIDES			
2559	2559	1						2 OF 2			
2559	2558	3	1262	1260	40						
2558	2558	11						ADD BANK 2 - 2558			
2558	2558	12						CLEAR BANK 2			
2558	2554	3	1260	1257.8	225						
2554	2554	1						1 OF 2			
2557	2556	2	1271	1270	65	0.51	0.16				
2556	2555	6	1270	1264	488	0.51	3.46	1 SIDE			
2555	2554	3	1258	1257.8	10						
2554	2554	1						2 OF 2			
2554	2552.5	3	1257.8	1252.8	515						
2552.5	2552	5	1252.8	1250.8	185			VALLEY			
2552	1303	5	1250.8	835	1400			MTN			
2552	1303	8				0.27	20.83				
1303	1303	10						save to bank 2 - 1303			
1335	1334	2	1293	1291	83	0.57	0.13				
1334	1333.8	6	1291	1280	270	0.57	1.74	1 SIDE			
1333.8	1333.8	1						1 of 2			
1334.8	1334.6	2	1287	1285	80	0.57	0.11				

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
1334.6	1334.4	6	1285	1284	50	0.55	0.46	2 SIDES			
1334.4	1333.8	3	1278	1276	200						
1333.8	1333.8	1						2 of 2			
1333.8	1333.4	3	1276	1273	100						
1333.4	1333.4	1						1 of 2			
1333	1333	2	1281	1280	80	0.56	0.29				
1333	1333.4	3	1274	1273	50						
1333.4	1333.4	1						2 of 2			
1333.4	1332	3	1273	1267	210						
1332	1332	1						1 of 2			
1337	1336	2	1278	1276	80	0.51	0.07				
1336	1335	6	1276	1273	240	0.51	0.53	2 SIDES			
1335	1332	3	1268	1267	30						
1332	1332	1						2 of 2			
1332	1330	3	1267	1265	150						
1330	1330	10	clean - left flow					save to bank 3 - 1330			
1353	1352	2	1284	1282	80	0.51	0.14				
1352	1351	6	1282	1278	270	0.51	0.79	2 SIDES			
1351	1350.4	3	1272	1267	280						
1350.4	1350.4	1						1 of 2			
1350.8	1350.6	2	1278	1276	80	0.51	0.10				
1350.6	1350.4	6	1276	1267	160	0.52	2.00	1 SIDE			
1350.4	1350.4	1						2 of 2			
1350.4	1346	3	1267	1265	60			WQ in			
1346	1330	3	1265	1255	850			WQ out			
1330	1330	11	clean - right flow					add bank 3			
1330	1330	12						clear bank 3			
1330	1326	5	1255	1120	410			MTN			
1330	1326	8				0.3	2.34				
1326	1326	1						1 of 2			
1328	1327	2	1325	1315	80	0.35	0.24				
1327	1326	5	1315	1120	1075			MTN			
1327	1326	8				0.3	6.90				
1326	1326	1						2 of 2			

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
1326	1303	5	1120	835	965			MTN			
1326	1303	8				0.27	8.99				
1303	1303	11						add bank 1			
1303	1303	11						add bank 2			
1303	1303	12						clear bank 1			
1303	1303	12						clear bank 2			
1303	1302	5	835	775	520			MTN			
1303	1302	8				0.29	9.18				
1302	1302	10						save to bank 1			
1339	1338	2	1284	1282	85	0.51	0.06				
1338	1337.8	6	1282	1276	165	0.51	0.98				
1337.8	1337.6	3	1270	1266	255						
1337.6	1337.6	1						1 of 2			
1345	1344	2	1277	1275	80	0.51	0.13				
1344	1343.8	6	1275	1272	210	0.52	0.69	1 SIDE			
1343.8	1337.6	3	1266.5	1266	50						
1337.6	1337.6	1						2 of 2			
1337.6	1345.6	3	1266	1264	125						
1345.6	1345.6	1						1 of 2			
1345.9	1345.8	2	1280	1278	100	0.57	0.13				
1345.8	1343	6	1278	1269.5	315	0.56	1.25	1 SIDE			
1343	1345.6	3	1264.5	1264	40						
1345.6	1345.6	1						2 of 2			
1345.6	1346.8	3	1264	1262	170						
1346.8	1346.8	1						1 of 3			
1348	1347	2	1275	1273	80	0.51	0.10				
1347	1346.9	6	1273	1265	150	0.52	0.97	2 SIDES			
1346.9	1346.8	3	1262.5	1262	50						
1346.8	1346.8	1						2 of 3			
1347.6	1347.5	2	1270	1268	100	0.57	0.15	1 SIDE			
1347.5	1347.4	6	1268	1265	110	0.54	1.69				
1347.4	1346.8	3	1262.5	1262	40						
1346.8	1346.8	1						3 of 3			
1346.8	1342	3	1262	1261.5	50						
1342	1342	1						1 of 2			

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

(c) Copyright 1982-2014 Advanced Engineering Software (aes)

Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

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***** DESCRIPTION OF STUDY *****

* PROPOSED HYDROLOGY *
* SUB BASIN 13 - NO DETENTION *
* *

FILE NAME: P-13.DAT

TIME/DATE OF STUDY: 13:31 02/23/2017

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

P-13.TXT

FLOW PROCESS FROM NODE 1321.00 TO NODE 1320.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1278.00

DOWNSTREAM ELEVATION(FEET) = 1275.00

ELEVATION DIFFERENCE(FEET) = 3.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914

SUBAREA RUNOFF(CFS) = 0.99

TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 0.99

FLOW PROCESS FROM NODE 1320.00 TO NODE 1319.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1275.00 DOWNSTREAM ELEVATION(FEET) = 1269.00

STREET LENGTH(FEET) = 655.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.94

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.36

HALFSTREET FLOOD WIDTH(FEET) = 11.66

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.35

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.85

STREET FLOW TRAVEL TIME(MIN.) = 4.64 Tc(MIN.) = 10.98

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.552

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

```

                                P-13.TXT
AREA-AVERAGE RUNOFF COEFFICIENT = 0.523
SUBAREA AREA(ACRES) = 4.03      SUBAREA RUNOFF(CFS) = 11.63
TOTAL AREA(ACRES) = 4.2        PEAK FLOW RATE(CFS) = 12.33

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.42    HALFSTREET FLOOD WIDTH(FEET) = 14.78
FLOW VELOCITY(FEET/SEC.) = 2.68    DEPTH*VELOCITY(FT*FT/SEC.) = 1.13
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1319.00 = 750.00 FEET.

*****
FLOW PROCESS FROM NODE 1319.00 TO NODE 1313.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1262.00
FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.83
ESTIMATED PIPE DIAMETER(INCH) = 21.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 12.33
PIPE TRAVEL TIME(MIN.) = 0.16    Tc(MIN.) = 11.14
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1313.00 = 825.00 FEET.

*****
FLOW PROCESS FROM NODE 1313.00 TO NODE 1313.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.14
RAINFALL INTENSITY(INCH/HR) = 5.50
TOTAL STREAM AREA(ACRES) = 4.25
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.33

*****
FLOW PROCESS FROM NODE 1316.00 TO NODE 1315.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 87.00
UPSTREAM ELEVATION(FEET) = 1282.00
DOWNSTREAM ELEVATION(FEET) = 1279.50
ELEVATION DIFFERENCE(FEET) = 2.50

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P-13.TXT

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.968
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.445
 SUBAREA RUNOFF(CFS) = 0.34
 TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.34

FLOW PROCESS FROM NODE 1315.00 TO NODE 1314.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1279.50 DOWNSTREAM ELEVATION(FEET) = 1269.50
 STREET LENGTH(FEET) = 360.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.16
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.29
 HALFSTREET FLOOD WIDTH(FEET) = 8.04
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.37
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.97
 STREET FLOW TRAVEL TIME(MIN.) = 1.78 Tc(MIN.) = 8.75
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.430
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 2.93 SUBAREA RUNOFF(CFS) = 9.61
 TOTAL AREA(ACRES) = 3.0 PEAK FLOW RATE(CFS) = 9.90

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.72
 FLOW VELOCITY(FEET/SEC.) = 3.91 DEPTH*VELOCITY(FT*FT/SEC.) = 1.33
 LONGEST FLOWPATH FROM NODE 1316.00 TO NODE 1314.00 = 447.00 FEET.

FLOW PROCESS FROM NODE 1314.00 TO NODE 1313.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

P-13.TXT

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1262.00
FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.54
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 9.90
PIPE TRAVEL TIME(MIN.) = 0.15 Tc(MIN.) = 8.90
LONGEST FLOWPATH FROM NODE 1316.00 TO NODE 1313.00 = 517.00 FEET.
```

FLOW PROCESS FROM NODE 1313.00 TO NODE 1313.00 IS CODE = 1

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.90
RAINFALL INTENSITY(INCH/HR) = 6.36
TOTAL STREAM AREA(ACRES) = 3.02
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.90
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.33	11.14	5.500	4.25
2	9.90	8.90	6.357	3.02

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.75	8.90	6.357
2	20.90	11.14	5.500

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 20.90 Tc(MIN.) = 11.14
TOTAL AREA(ACRES) = 7.3
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1313.00 = 825.00 FEET.
```

FLOW PROCESS FROM NODE 1313.00 TO NODE 1309.00 IS CODE = 31

```
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```


P-13.TXT

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1262.00  DOWNSTREAM(FEET) = 1261.00
FLOW LENGTH(FEET) = 120.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.46
ESTIMATED PIPE DIAMETER(INCH) = 27.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 20.90
PIPE TRAVEL TIME(MIN.) = 0.27  Tc(MIN.) = 11.41
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1309.00 = 945.00 FEET.
```

FLOW PROCESS FROM NODE 1309.00 TO NODE 1309.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.41
RAINFALL INTENSITY(INCH/HR) = 5.42
TOTAL STREAM AREA(ACRES) = 7.27
PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.90
```

FLOW PROCESS FROM NODE 1312.00 TO NODE 1311.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1275.00
DOWNSTREAM ELEVATION(FEET) = 1274.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
SUBAREA RUNOFF(CFS) = 0.40
TOTAL AREA(ACRES) = 0.11  TOTAL RUNOFF(CFS) = 0.40
```

FLOW PROCESS FROM NODE 1311.00 TO NODE 1310.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1274.00  DOWNSTREAM(FEET) = 1269.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 335.00  CHANNEL SLOPE = 0.0149
```

P-13.TXT

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.718
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.15
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.82
 AVERAGE FLOW DEPTH(FEET) = 0.19 TRAVEL TIME(MIN.) = 3.07
 Tc(MIN.) = 10.49
 SUBAREA AREA(ACRES) = 0.51 SUBAREA RUNOFF(CFS) = 1.49
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 1.81

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24 FLOW VELOCITY(FEET/SEC.) = 2.15
 LONGEST FLOWPATH FROM NODE 1312.00 TO NODE 1310.00 = 400.00 FEET.

FLOW PROCESS FROM NODE 1310.00 TO NODE 1309.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1261.00
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.40
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.81
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.55
 LONGEST FLOWPATH FROM NODE 1312.00 TO NODE 1309.00 = 430.00 FEET.

FLOW PROCESS FROM NODE 1309.00 TO NODE 1309.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.55
 RAINFALL INTENSITY(INCH/HR) = 5.70
 TOTAL STREAM AREA(ACRES) = 0.62
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.81

FLOW PROCESS FROM NODE 1318.00 TO NODE 1317.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00

UPSTREAM ELEVATION(FEET) = 1275.00

DOWNSTREAM ELEVATION(FEET) = 1270.00

ELEVATION DIFFERENCE(FEET) = 5.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.424

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.750

SUBAREA RUNOFF(CFS) = 0.67

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.67

FLOW PROCESS FROM NODE 1317.00 TO NODE 1309.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1270.00 DOWNSTREAM ELEVATION(FEET) = 1267.00

STREET LENGTH(FEET) = 250.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.51

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.23

HALFSTREET FLOOD WIDTH(FEET) = 5.32

AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.89

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.44

STREET FLOW TRAVEL TIME(MIN.) = 2.21 Tc(MIN.) = 7.63

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.021

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 0.47 SUBAREA RUNOFF(CFS) = 1.68

TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 2.22

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END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.26 HALFSTREET FLOOD WIDTH(Feet) = 6.58
 FLOW VELOCITY(Feet/Sec.) = 2.01 DEPTH*VELOCITY(FT*FT/SEC.) = 0.52
 LONGEST FLOWPATH FROM NODE 1318.00 TO NODE 1309.00 = 335.00 FEET.

FLOW PROCESS FROM NODE 1309.00 TO NODE 1309.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.63
 RAINFALL INTENSITY(INCH/HR) = 7.02
 TOTAL STREAM AREA(ACRES) = 0.62
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.22

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.90	11.41	5.417	7.27
2	1.81	10.55	5.698	0.62
3	2.22	7.63	7.021	0.62

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.65	7.63	7.021
2	23.48	10.55	5.698
3	24.33	11.41	5.417

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 24.33 Tc(MIN.) = 11.41
 TOTAL AREA(ACRES) = 8.5
 LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1309.00 = 945.00 FEET.

FLOW PROCESS FROM NODE 1309.00 TO NODE 1308.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1261.00 DOWNSTREAM(Feet) = 1260.50

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FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 18.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.63
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 24.33
 PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 11.50
 LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1308.00 = 990.00 FEET.

FLOW PROCESS FROM NODE 1308.00 TO NODE 1307.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1260.50 DOWNSTREAM(FEET) = 1257.50

CHANNEL LENGTH THRU SUBAREA(FEET) = 590.00 CHANNEL SLOPE = 0.0051

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.628

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5300

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 25.62

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.21

AVERAGE FLOW DEPTH(FEET) = 1.38 TRAVEL TIME(MIN.) = 3.06

Tc(MIN.) = 14.56

SUBAREA AREA(ACRES) = 1.05 SUBAREA RUNOFF(CFS) = 2.58

AREA-AVERAGE RUNOFF COEFFICIENT = 0.518

TOTAL AREA(ACRES) = 9.6 PEAK FLOW RATE(CFS) = 24.33

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.35 FLOW VELOCITY(FEET/SEC.) = 3.17

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1307.00 = 1580.00 FEET.

FLOW PROCESS FROM NODE 1307.00 TO NODE 1307.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 14.56

RAINFALL INTENSITY(INCH/HR) = 4.63

TOTAL STREAM AREA(ACRES) = 9.56

PEAK FLOW RATE(CFS) AT CONFLUENCE = 24.33

FLOW PROCESS FROM NODE 1323.00 TO NODE 1322.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1274.00

DOWNSTREAM ELEVATION(FEET) = 1272.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.287

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.955

SUBAREA RUNOFF(CFS) = 0.68

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.68

FLOW PROCESS FROM NODE 1322.00 TO NODE 1306.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1272.00 DOWNSTREAM ELEVATION(FEET) = 1267.00

STREET LENGTH(FEET) = 315.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 9.62

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.44

HALFSTREET FLOOD WIDTH(FEET) = 15.78

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.69

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.63

STREET FLOW TRAVEL TIME(MIN.) = 1.42 Tc(MIN.) = 7.71

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.973

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.570

SUBAREA AREA(ACRES) = 4.48 SUBAREA RUNOFF(CFS) = 17.81

TOTAL AREA(ACRES) = 4.6 PEAK FLOW RATE(CFS) = 18.40

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END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.49 HALFSTREET FLOOD WIDTH(Feet) = 18.00
 FLOW VELOCITY(Feet/Sec.) = 4.00 DEPTH*VELOCITY(FT*FT/SEC.) = 1.94
 LONGEST FLOWPATH FROM NODE 1323.00 TO NODE 1306.00 = 395.00 FEET.

FLOW PROCESS FROM NODE 1306.00 TO NODE 1307.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1263.00 DOWNSTREAM(Feet) = 1257.50
 FLOW LENGTH(Feet) = 120.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.9 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 13.58
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 18.40
 PIPE TRAVEL TIME(MIN.) = 0.15 Tc(MIN.) = 7.86
 LONGEST FLOWPATH FROM NODE 1323.00 TO NODE 1307.00 = 515.00 FEET.

FLOW PROCESS FROM NODE 1307.00 TO NODE 1307.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.86
 RAINFALL INTENSITY(INCH/HR) = 6.89
 TOTAL STREAM AREA(ACRES) = 4.63
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 18.40

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	24.33	14.56	4.628	9.56
2	18.40	7.86	6.889	4.63

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	34.75	7.86	6.889
2	36.69	14.56	4.628

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 36.69 Tc(MIN.) = 14.56

TOTAL AREA(ACRES) = 14.2

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1307.00 = 1580.00 FEET.

FLOW PROCESS FROM NODE 1307.00 TO NODE 1305.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1257.50 DOWNSTREAM(FEET) = 1255.20

FLOW LENGTH(FEET) = 115.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.7 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 11.80

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 36.69

PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 14.72

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1305.50 = 1695.00 FEET.

FLOW PROCESS FROM NODE 1305.50 TO NODE 1305.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 14.72

RAINFALL INTENSITY(INCH/HR) = 4.60

TOTAL STREAM AREA(ACRES) = 14.19

PEAK FLOW RATE(CFS) AT CONFLUENCE = 36.69

FLOW PROCESS FROM NODE 1305.80 TO NODE 1305.70 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1287.00

DOWNSTREAM ELEVATION(FEET) = 1285.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.539

WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN

THE MAXIMUM OVERLAND FLOW LENGTH = 80.00

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(Reference: Table 3-1B of Hydrology Manual)

THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.076

SUBAREA RUNOFF(CFS) = 0.47

TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.47

FLOW PROCESS FROM NODE 1305.70 TO NODE 1305.60 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1285.00 DOWNSTREAM ELEVATION(FEET) = 1275.00

STREET LENGTH(FEET) = 570.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.22

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.42

HALFSTREET FLOOD WIDTH(FEET) = 14.53

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.69

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.54

STREET FLOW TRAVEL TIME(MIN.) = 2.58 Tc(MIN.) = 10.12

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.853

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5600

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.559

SUBAREA AREA(ACRES) = 4.71 SUBAREA RUNOFF(CFS) = 15.44

TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 15.83

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.49 HALFSTREET FLOOD WIDTH(FEET) = 18.00

FLOW VELOCITY(FEET/SEC.) = 4.20 DEPTH*VELOCITY(FT*FT/SEC.) = 2.04

LONGEST FLOWPATH FROM NODE 1305.80 TO NODE 1305.60 = 670.00 FEET.

FLOW PROCESS FROM NODE 1305.60 TO NODE 1305.50 IS CODE = 31

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>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1269.00 DOWNSTREAM(FEET) = 1255.20
FLOW LENGTH(FEET) = 525.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.42
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 15.83
PIPE TRAVEL TIME(MIN.) = 0.84 Tc(MIN.) = 10.96
LONGEST FLOWPATH FROM NODE 1305.80 TO NODE 1305.50 = 1195.00 FEET.
```

FLOW PROCESS FROM NODE 1305.50 TO NODE 1305.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.96
RAINFALL INTENSITY(INCH/HR) = 5.56
TOTAL STREAM AREA(ACRES) = 4.84
PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.83
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	36.69	14.72	4.595	14.19
2	15.83	10.96	5.560	4.84

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	46.16	10.96	5.560
2	49.78	14.72	4.595

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 49.78 Tc(MIN.) = 14.72
TOTAL AREA(ACRES) = 19.0
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1305.50 = 1695.00 FEET.

FLOW PROCESS FROM NODE 1305.50 TO NODE 1305.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1255.20 DOWNSTREAM(FEET) = 1252.70
FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 22.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.69
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 49.78
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 14.89
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1305.00 = 1820.00 FEET.
```

FLOW PROCESS FROM NODE 1305.00 TO NODE 1304.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1252.70 DOWNSTREAM(FEET) = 1105.00
FLOW LENGTH(FEET) = 320.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 41.88
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 49.78
PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 15.01
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1304.00 = 2140.00 FEET.
```

FLOW PROCESS FROM NODE 1304.00 TO NODE 1303.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1105.00 DOWNSTREAM(FEET) = 835.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1225.00 CHANNEL SLOPE = 0.2204
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.303
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3400
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 59.41
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 15.83
AVERAGE FLOW DEPTH(FEET) = 0.81 TRAVEL TIME(MIN.) = 1.29
Tc(MIN.) = 16.30
SUBAREA AREA(ACRES) = 13.15 SUBAREA RUNOFF(CFS) = 19.24
AREA-AVERAGE RUNOFF COEFFICIENT = 0.459
TOTAL AREA(ACRES) = 32.2 PEAK FLOW RATE(CFS) = 63.53
```

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.84 FLOW VELOCITY(FEET/SEC.) = 16.25

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1303.00 = 3365.00 FEET.

FLOW PROCESS FROM NODE 1303.00 TO NODE 1303.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

=====

FLOW PROCESS FROM NODE 2564.00 TO NODE 2563.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5400

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1273.00

DOWNSTREAM ELEVATION(FEET) = 1271.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.643

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.677

SUBAREA RUNOFF(CFS) = 0.66

TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.66

FLOW PROCESS FROM NODE 2563.00 TO NODE 2563.10 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1271.00 DOWNSTREAM ELEVATION(FEET) = 1269.00

STREET LENGTH(FEET) = 230.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.89

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STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31
 HALFSTREET FLOOD WIDTH(FEET) = 9.24
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.00
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.62
 STREET FLOW TRAVEL TIME(MIN.) = 1.91 Tc(MIN.) = 8.56
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.521
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.512
 SUBAREA AREA(ACRES) = 1.93 SUBAREA RUNOFF(CFS) = 6.42
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 6.98

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.84
 FLOW VELOCITY(FEET/SEC.) = 2.30 DEPTH*VELOCITY(FT*FT/SEC.) = 0.83
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2563.10 = 310.00 FEET.

FLOW PROCESS FROM NODE 2563.10 TO NODE 2562.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1266.00 DOWNSTREAM(FEET) = 1261.00
 FLOW LENGTH(FEET) = 210.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.49
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.98
 PIPE TRAVEL TIME(MIN.) = 0.41 Tc(MIN.) = 8.97
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2562.00 = 520.00 FEET.

FLOW PROCESS FROM NODE 2562.00 TO NODE 2562.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.97
 RAINFALL INTENSITY(INCH/HR) = 6.33
 TOTAL STREAM AREA(ACRES) = 2.09
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.98

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FLOW PROCESS FROM NODE 2563.10 TO NODE 2563.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00

UPSTREAM ELEVATION(FEET) = 1269.00

DOWNSTREAM ELEVATION(FEET) = 1268.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151

SUBAREA RUNOFF(CFS) = 2.01

TOTAL AREA(ACRES) = 0.55 TOTAL RUNOFF(CFS) = 2.01

FLOW PROCESS FROM NODE 2563.20 TO NODE 2562.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1268.00 DOWNSTREAM ELEVATION(FEET) = 1267.00

STREET LENGTH(FEET) = 120.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.92

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.29

HALFSTREET FLOOD WIDTH(FEET) = 8.17

AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.86

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.54

STREET FLOW TRAVEL TIME(MIN.) = 1.08 Tc(MIN.) = 8.49

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.553

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 0.55 SUBAREA RUNOFF(CFS) = 1.84

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TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 3.68

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.10
 FLOW VELOCITY(FEET/SEC.) = 1.94 DEPTH*VELOCITY(FT*FT/SEC.) = 0.60
 LONGEST FLOWPATH FROM NODE 2563.10 TO NODE 2562.00 = 185.00 FEET.

FLOW PROCESS FROM NODE 2562.00 TO NODE 2562.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.49
 RAINFALL INTENSITY(INCH/HR) = 6.55
 TOTAL STREAM AREA(ACRES) = 1.10
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.68

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.98	8.97	6.326	2.09
2	3.68	8.49	6.553	1.10

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.29	8.49	6.553
2	10.53	8.97	6.326

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.53 Tc(MIN.) = 8.97
 TOTAL AREA(ACRES) = 3.2
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2562.00 = 520.00 FEET.

FLOW PROCESS FROM NODE 2562.00 TO NODE 2558.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1261.00 DOWNSTREAM(FEET) = 1260.00
 FLOW LENGTH(FEET) = 140.00 MANNING'S N = 0.013

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DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.90
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.53
 PIPE TRAVEL TIME(MIN.) = 0.40 Tc(MIN.) = 9.36
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2558.00 = 660.00 FEET.

 FLOW PROCESS FROM NODE 2558.00 TO NODE 2558.00 IS CODE = 10

 >>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 2561.00 TO NODE 2560.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00
 UPSTREAM ELEVATION(FEET) = 1275.00
 DOWNSTREAM ELEVATION(FEET) = 1274.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.960
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.234
 SUBAREA RUNOFF(CFS) = 0.55
 TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.55

 FLOW PROCESS FROM NODE 2560.00 TO NODE 2560.10 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1274.00 DOWNSTREAM ELEVATION(FEET) = 1269.00
 STREET LENGTH(FEET) = 315.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.96
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.29
 HALFSTREET FLOOD WIDTH(FEET) = 8.11
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.55
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.74
 STREET FLOW TRAVEL TIME(MIN.) = 2.06 Tc(MIN.) = 8.02
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.801
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 1.96 SUBAREA RUNOFF(CFS) = 6.80
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 7.25

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.59
 FLOW VELOCITY(FEET/SEC.) = 2.92 DEPTH*VELOCITY(FT*FT/SEC.) = 0.99
 LONGEST FLOWPATH FROM NODE 2561.00 TO NODE 2560.10 = 365.00 FEET.

FLOW PROCESS FROM NODE 2560.10 TO NODE 2559.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1262.00
 FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.06
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.25
 PIPE TRAVEL TIME(MIN.) = 0.53 Tc(MIN.) = 8.54
 LONGEST FLOWPATH FROM NODE 2561.00 TO NODE 2559.00 = 525.00 FEET.

FLOW PROCESS FROM NODE 2559.00 TO NODE 2559.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.54
 RAINFALL INTENSITY(INCH/HR) = 6.53
 TOTAL STREAM AREA(ACRES) = 2.09
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.25

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FLOW PROCESS FROM NODE 2560.10 TO NODE 2560.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00

UPSTREAM ELEVATION(FEET) = 1269.00

DOWNSTREAM ELEVATION(FEET) = 1268.80

ELEVATION DIFFERENCE(FEET) = 0.20

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 9.461

WARNING: THE MINIMUM OVERLAND FLOW SLOPE, 0.5%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.112

SUBAREA RUNOFF(CFS) = 1.25

TOTAL AREA(ACRES) = 0.40 TOTAL RUNOFF(CFS) = 1.25

FLOW PROCESS FROM NODE 2560.20 TO NODE 2559.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1268.80 DOWNSTREAM ELEVATION(FEET) = 1268.00

STREET LENGTH(FEET) = 115.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.65

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.29

HALFSTREET FLOOD WIDTH(FEET) = 8.17

AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.69

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.49

STREET FLOW TRAVEL TIME(MIN.) = 1.14 T_c(MIN.) = 10.60

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.681

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

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 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.97 SUBAREA RUNOFF(CFS) = 2.81
 TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 3.97

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.77
 FLOW VELOCITY(FEET/SEC.) = 1.85 DEPTH*VELOCITY(FT*FT/SEC.) = 0.60
 LONGEST FLOWPATH FROM NODE 2560.10 TO NODE 2559.00 = 165.00 FEET.

FLOW PROCESS FROM NODE 2559.00 TO NODE 2559.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.60
 RAINFALL INTENSITY(INCH/HR) = 5.68
 TOTAL STREAM AREA(ACRES) = 1.37
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.97

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.25	8.54	6.528	2.09
2	3.97	10.60	5.681	1.37

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.45	8.54	6.528
2	10.28	10.60	5.681

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 10.45 Tc(MIN.) = 8.54
 TOTAL AREA(ACRES) = 3.5
 LONGEST FLOWPATH FROM NODE 2561.00 TO NODE 2559.00 = 525.00 FEET.

FLOW PROCESS FROM NODE 2559.00 TO NODE 2558.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

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ELEVATION DATA: UPSTREAM(FEET) = 1262.00 DOWNSTREAM(FEET) = 1260.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.41
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.45
 PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 8.60
 LONGEST FLOWPATH FROM NODE 2561.00 TO NODE 2558.00 = 565.00 FEET.

FLOW PROCESS FROM NODE 2558.00 TO NODE 2558.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.45	8.60	6.501	3.46

LONGEST FLOWPATH FROM NODE 2561.00 TO NODE 2558.00 = 565.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.53	9.36	6.153	3.19

LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2558.00 = 660.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.12	8.60	6.501
2	20.42	9.36	6.153

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.42 Tc(MIN.) = 9.36
 TOTAL AREA(ACRES) = 6.7

FLOW PROCESS FROM NODE 2558.00 TO NODE 2558.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2558.00 TO NODE 2554.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

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>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1260.00 DOWNSTREAM(FEET) = 1257.80
FLOW LENGTH(FEET) = 225.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.69
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 20.42
PIPE TRAVEL TIME(MIN.) = 0.49 Tc(MIN.) = 9.85
LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2554.00 = 885.00 FEET.
```

FLOW PROCESS FROM NODE 2554.00 TO NODE 2554.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.85
RAINFALL INTENSITY(INCH/HR) = 5.95
TOTAL STREAM AREA(ACRES) = 6.65
PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.42
```

FLOW PROCESS FROM NODE 2557.00 TO NODE 2556.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1271.00
DOWNSTREAM ELEVATION(FEET) = 1270.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
SUBAREA RUNOFF(CFS) = 0.58
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.58
```

FLOW PROCESS FROM NODE 2556.00 TO NODE 2555.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1270.00 DOWNSTREAM ELEVATION(FEET) = 1264.00
STREET LENGTH(FEET) = 488.00 CURB HEIGHT(INCHES) = 6.0
```

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STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.77

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.40

HALFSTREET FLOOD WIDTH(FEET) = 13.53

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.96

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.17

STREET FLOW TRAVEL TIME(MIN.) = 2.75 Tc(MIN.) = 10.16

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.836

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 3.46 SUBAREA RUNOFF(CFS) = 10.30

TOTAL AREA(ACRES) = 3.6 PEAK FLOW RATE(CFS) = 10.77

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.47 HALFSTREET FLOOD WIDTH(FEET) = 17.34

FLOW VELOCITY(FEET/SEC.) = 3.45 DEPTH*VELOCITY(FT*FT/SEC.) = 1.63

LONGEST FLOWPATH FROM NODE 2557.00 TO NODE 2555.00 = 553.00 FEET.

FLOW PROCESS FROM NODE 2555.00 TO NODE 2554.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1258.00 DOWNSTREAM(FEET) = 1257.80

FLOW LENGTH(FEET) = 10.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 8.78

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 10.77

PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 10.18

LONGEST FLOWPATH FROM NODE 2557.00 TO NODE 2554.00 = 563.00 FEET.

FLOW PROCESS FROM NODE 2554.00 TO NODE 2554.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.18
 RAINFALL INTENSITY(INCH/HR) = 5.83
 TOTAL STREAM AREA(ACRES) = 3.62
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.77

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.42	9.85	5.955	6.65
2	10.77	10.18	5.829	3.62

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.84	9.85	5.955
2	30.76	10.18	5.829

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 30.84 Tc(MIN.) = 9.85
 TOTAL AREA(ACRES) = 10.3
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2554.00 = 885.00 FEET.

FLOW PROCESS FROM NODE 2554.00 TO NODE 2552.50 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1257.80 DOWNSTREAM(FEET) = 1252.80
 FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 20.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.69
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 30.84
 PIPE TRAVEL TIME(MIN.) = 0.99 Tc(MIN.) = 10.84
 LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2552.50 = 1400.00 FEET.

FLOW PROCESS FROM NODE 2552.50 TO NODE 2552.00 IS CODE = 52

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>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1252.80 DOWNSTREAM(FEET) = 1250.80
CHANNEL LENGTH THRU SUBAREA(FEET) = 185.00 CHANNEL SLOPE = 0.0108
CHANNEL FLOW THRU SUBAREA(CFS) = 30.84
FLOW VELOCITY(FEET/SEC) = 3.51 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.88 Tc(MIN.) = 11.72
LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 2552.00 = 1585.00 FEET.

FLOW PROCESS FROM NODE 2552.00 TO NODE 1303.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1250.80 DOWNSTREAM(FEET) = 835.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1400.00 CHANNEL SLOPE = 0.2970
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1943 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 30.84
FLOW VELOCITY(FEET/SEC) = 7.73 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.02 Tc(MIN.) = 14.74
LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 1303.00 = 2985.00 FEET.

FLOW PROCESS FROM NODE 2552.00 TO NODE 1303.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.592
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3494
SUBAREA AREA(ACRES) = 20.83 SUBAREA RUNOFF(CFS) = 25.83
TOTAL AREA(ACRES) = 31.1 TOTAL RUNOFF(CFS) = 49.90
TC(MIN.) = 14.74

FLOW PROCESS FROM NODE 1303.00 TO NODE 1303.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<

FLOW PROCESS FROM NODE 1335.00 TO NODE 1334.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.00

UPSTREAM ELEVATION(FEET) = 1293.00

DOWNSTREAM ELEVATION(FEET) = 1291.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.483

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.799

SUBAREA RUNOFF(CFS) = 0.58

TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.58

FLOW PROCESS FROM NODE 1334.00 TO NODE 1333.80 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1291.00 DOWNSTREAM ELEVATION(FEET) = 1280.00

STREET LENGTH(FEET) = 270.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.10

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31

HALFSTREET FLOOD WIDTH(FEET) = 9.10

AVERAGE FLOW VELOCITY(FT/SEC.) = 4.33

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.33

STREET FLOW TRAVEL TIME(MIN.) = 1.04 Tc(MIN.) = 7.52

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.085

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.570

SUBAREA AREA(ACRES) = 1.74 SUBAREA RUNOFF(CFS) = 7.03

TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 7.55

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END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.84

FLOW VELOCITY(FEET/SEC.) = 4.97 DEPTH*VELOCITY(FT*FT/SEC.) = 1.80

LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1333.80 = 353.00 FEET.

FLOW PROCESS FROM NODE 1333.80 TO NODE 1333.80 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 7.52

RAINFALL INTENSITY(INCH/HR) = 7.09

TOTAL STREAM AREA(ACRES) = 1.87

PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.55

FLOW PROCESS FROM NODE 1334.80 TO NODE 1334.60 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1287.00

DOWNSTREAM ELEVATION(FEET) = 1285.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.287

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.955

SUBAREA RUNOFF(CFS) = 0.50

TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 1334.60 TO NODE 1334.40 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1285.00 DOWNSTREAM ELEVATION(FEET) = 1284.00

STREET LENGTH(FEET) = 50.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

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SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.47
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(Feet) = 0.22
 HALFSTREET FLOOD WIDTH(Feet) = 4.46
 AVERAGE FLOW VELOCITY(Feet/Sec.) = 2.32
 PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 0.50
 STREET FLOW TRAVEL TIME(Min.) = 0.36 Tc(Min.) = 6.65
 100 YEAR RAINFALL INTENSITY(Inch/Hour) = 7.675
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.554
 SUBAREA AREA(Acres) = 0.46 SUBAREA RUNOFF(CFS) = 1.94
 TOTAL AREA(Acres) = 0.6 PEAK FLOW RATE(CFS) = 2.42

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(Feet) = 0.25 HALFSTREET FLOOD WIDTH(Feet) = 6.05
 FLOW VELOCITY(Feet/Sec.) = 2.50 DEPTH*VELOCITY(Feet*Feet/Sec.) = 0.62
 LONGEST FLOWPATH FROM NODE 1334.80 TO NODE 1334.40 = 130.00 FEET.

FLOW PROCESS FROM NODE 1334.40 TO NODE 1333.80 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1278.00 DOWNSTREAM(Feet) = 1276.00
 FLOW LENGTH(Feet) = 200.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(Inch) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.0 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 4.65
 ESTIMATED PIPE DIAMETER(Inch) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.42
 PIPE TRAVEL TIME(Min.) = 0.72 Tc(Min.) = 7.36
 LONGEST FLOWPATH FROM NODE 1334.80 TO NODE 1333.80 = 330.00 FEET.

FLOW PROCESS FROM NODE 1333.80 TO NODE 1333.80 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.36
 RAINFALL INTENSITY(INCH/HR) = 7.18
 TOTAL STREAM AREA(ACRES) = 0.57
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.42

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.55	7.52	7.085	1.87
2	2.42	7.36	7.185	0.57

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.81	7.36	7.185
2	9.94	7.52	7.085

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.94 Tc(MIN.) = 7.52
 TOTAL AREA(ACRES) = 2.4
 LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1333.80 = 353.00 FEET.

FLOW PROCESS FROM NODE 1333.80 TO NODE 1333.40 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1276.00 DOWNSTREAM(FEET) = 1273.00
 FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 10.11
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 9.94
 PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 7.69
 LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1333.40 = 453.00 FEET.

FLOW PROCESS FROM NODE 1333.40 TO NODE 1333.40 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.69
 RAINFALL INTENSITY(INCH/HR) = 6.99
 TOTAL STREAM AREA(ACRES) = 2.44
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.94

 FLOW PROCESS FROM NODE 1333.00 TO NODE 1333.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5600
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1281.00
 DOWNSTREAM ELEVATION(FEET) = 1280.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.482
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
 THE MAXIMUM OVERLAND FLOW LENGTH = 68.75
 (Reference: Table 3-1B of Hydrology Manual)
 THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN T_c CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.111
 SUBAREA RUNOFF(CFS) = 1.15
 TOTAL AREA(ACRES) = 0.29 TOTAL RUNOFF(CFS) = 1.15

 FLOW PROCESS FROM NODE 1333.00 TO NODE 1333.40 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1274.00 DOWNSTREAM(FEET) = 1273.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.81
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.15
 PIPE TRAVEL TIME(MIN.) = 0.17 T_c(MIN.) = 7.65
 LONGEST FLOWPATH FROM NODE 1333.00 TO NODE 1333.40 = 130.00 FEET.

 FLOW PROCESS FROM NODE 1333.40 TO NODE 1333.40 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.65
RAINFALL INTENSITY(INCH/HR) = 7.01
TOTAL STREAM AREA(ACRES) = 0.29
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.15
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.94	7.69	6.987	2.44
2	1.15	7.65	7.006	0.29

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.07	7.65	7.006
2	11.09	7.69	6.987

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 11.09 Tc(MIN.) = 7.69
TOTAL AREA(ACRES) = 2.7
LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1333.40 = 453.00 FEET.
```

FLOW PROCESS FROM NODE 1333.40 TO NODE 1332.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1273.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 210.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.18
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.09
PIPE TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 8.03
LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1332.00 = 663.00 FEET.
```

FLOW PROCESS FROM NODE 1332.00 TO NODE 1332.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.03
RAINFALL INTENSITY(INCH/HR) = 6.79
TOTAL STREAM AREA(ACRES) = 2.73
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.09

*****
FLOW PROCESS FROM NODE 1337.00 TO NODE 1336.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1278.00
DOWNSTREAM ELEVATION(FEET) = 1276.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.27
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.27

*****
FLOW PROCESS FROM NODE 1336.00 TO NODE 1335.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1273.00
STREET LENGTH(FEET) = 240.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.11
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.32
```

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AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.82
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.39
STREET FLOW TRAVEL TIME(MIN.) = 2.20 Tc(MIN.) = 9.20
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.224
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.53 SUBAREA RUNOFF(CFS) = 1.68
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 1.90

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 5.98
FLOW VELOCITY(FEET/SEC.) = 2.00 DEPTH*VELOCITY(FT*FT/SEC.) = 0.49
LONGEST FLOWPATH FROM NODE 1337.00 TO NODE 1335.00 = 320.00 FEET.

FLOW PROCESS FROM NODE 1335.00 TO NODE 1332.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.67
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.90
PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 9.27
LONGEST FLOWPATH FROM NODE 1337.00 TO NODE 1332.00 = 350.00 FEET.

FLOW PROCESS FROM NODE 1332.00 TO NODE 1332.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.27
RAINFALL INTENSITY(INCH/HR) = 6.19
TOTAL STREAM AREA(ACRES) = 0.60
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.90

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

			P-13.TXT	
1	11.09	8.03	6.793	2.73
2	1.90	9.27	6.191	0.60

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	12.74	8.03	6.793
2	12.02	9.27	6.191

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 12.74 Tc(MIN.) = 8.03

TOTAL AREA(ACRES) = 3.3

LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1332.00 = 663.00 FEET.

FLOW PROCESS FROM NODE 1332.00 TO NODE 1330.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1267.00 DOWNSTREAM(FEET) = 1265.00

FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.4 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 7.89

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 12.74

PIPE TRAVEL TIME(MIN.) = 0.32 Tc(MIN.) = 8.35

LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1330.00 = 813.00 FEET.

FLOW PROCESS FROM NODE 1330.00 TO NODE 1330.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<

FLOW PROCESS FROM NODE 1353.00 TO NODE 1352.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1284.00

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                                P-13.TXT
DOWNSTREAM ELEVATION(FEET) = 1282.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.53
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.53

*****
FLOW PROCESS FROM NODE 1352.00 TO NODE 1351.00 IS CODE = 62
-----
>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<
=====
UPSTREAM ELEVATION(FEET) = 1282.00 DOWNSTREAM ELEVATION(FEET) = 1278.00
STREET LENGTH(FEET) = 270.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.79
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 5.52
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.12
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.50
STREET FLOW TRAVEL TIME(MIN.) = 2.12 Tc(MIN.) = 9.12
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.259
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.79 SUBAREA RUNOFF(CFS) = 2.52
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 2.97

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.18
FLOW VELOCITY(FEET/SEC.) = 2.34 DEPTH*VELOCITY(FT*FT/SEC.) = 0.63
LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1351.00 = 350.00 FEET.

*****
FLOW PROCESS FROM NODE 1351.00 TO NODE 1350.40 IS CODE = 31

```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1272.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 280.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.07
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.97
PIPE TRAVEL TIME(MIN.) = 0.77 Tc(MIN.) = 9.89
LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1350.40 = 630.00 FEET.

FLOW PROCESS FROM NODE 1350.40 TO NODE 1350.40 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.89
RAINFALL INTENSITY(INCH/HR) = 5.94
TOTAL STREAM AREA(ACRES) = 0.93
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.97

FLOW PROCESS FROM NODE 1350.80 TO NODE 1350.60 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1278.00
DOWNSTREAM ELEVATION(FEET) = 1276.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 1350.60 TO NODE 1350.40 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

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=====

UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1267.00
 STREET LENGTH(FEET) = 160.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.06
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.30
 HALFSTREET FLOOD WIDTH(FEET) = 8.44
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.88
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.44
 STREET FLOW TRAVEL TIME(MIN.) = 0.55 Tc(MIN.) = 7.54
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.072

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 2.00 SUBAREA RUNOFF(CFS) = 7.36
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 7.72

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 11.16
 FLOW VELOCITY(FEET/SEC.) = 5.66 DEPTH*VELOCITY(FT*FT/SEC.) = 1.98
 LONGEST FLOWPATH FROM NODE 1350.80 TO NODE 1350.40 = 240.00 FEET.

FLOW PROCESS FROM NODE 1350.40 TO NODE 1350.40 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.54
 RAINFALL INTENSITY(INCH/HR) = 7.07
 TOTAL STREAM AREA(ACRES) = 2.10
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.72

** CONFLUENCE DATA **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	2.97	9.89	5.940	0.93
2	7.72	7.54	7.072	2.10

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.98	7.54	7.072
2	9.45	9.89	5.940

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.98 Tc(MIN.) = 7.54

TOTAL AREA(ACRES) = 3.0

LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1350.40 = 630.00 FEET.

FLOW PROCESS FROM NODE 1350.40 TO NODE 1346.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1267.00 DOWNSTREAM(Feet) = 1265.00

FLOW LENGTH(Feet) = 60.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.5 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 10.54

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.98

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 7.64

LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1346.00 = 690.00 FEET.

FLOW PROCESS FROM NODE 1346.00 TO NODE 1330.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1265.00 DOWNSTREAM(Feet) = 1255.00

FLOW LENGTH(Feet) = 850.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.7 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 6.94

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.98

PIPE TRAVEL TIME(MIN.) = 2.04 Tc(MIN.) = 9.68

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LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1330.00 = 1540.00 FEET.

FLOW PROCESS FROM NODE 1330.00 TO NODE 1330.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.98	9.68	6.022	3.03

LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1330.00 = 1540.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.74	8.35	6.625	3.33

LONGEST FLOWPATH FROM NODE 1335.00 TO NODE 1330.00 = 813.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	21.35	8.35	6.625
2	21.56	9.68	6.022

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.56 Tc(MIN.) = 9.68
TOTAL AREA(ACRES) = 6.4

FLOW PROCESS FROM NODE 1330.00 TO NODE 1330.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 1330.00 TO NODE 1326.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1255.00 DOWNSTREAM(FEET) = 1120.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 410.00 CHANNEL SLOPE = 0.3293
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2016 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 21.56
FLOW VELOCITY(FEET/SEC) = 6.99 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

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                                P-13.TXT
TRAVEL TIME(MIN.) = 0.98    Tc(MIN.) = 10.66
LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1326.00 = 1950.00 FEET.

*****
FLOW PROCESS FROM NODE 1330.00 TO NODE 1326.00 IS CODE = 81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.660
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4733
SUBAREA AREA(ACRES) = 2.34    SUBAREA RUNOFF(CFS) = 3.97
TOTAL AREA(ACRES) = 8.7    TOTAL RUNOFF(CFS) = 23.30
TC(MIN.) = 10.66

*****
FLOW PROCESS FROM NODE 1326.00 TO NODE 1326.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.66
RAINFALL INTENSITY(INCH/HR) = 5.66
TOTAL STREAM AREA(ACRES) = 8.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 23.30

*****
FLOW PROCESS FROM NODE 1328.00 TO NODE 1327.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 80.00
UPSTREAM ELEVATION(Feet) = 1325.00
DOWNSTREAM ELEVATION(Feet) = 1315.00
ELEVATION DIFFERENCE(Feet) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.605
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.567
SUBAREA RUNOFF(CFS) = 0.72
TOTAL AREA(ACRES) = 0.24    TOTAL RUNOFF(CFS) = 0.72

*****

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FLOW PROCESS FROM NODE 1327.00 TO NODE 1326.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1315.00 DOWNSTREAM(FEET) = 1120.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1075.00 CHANNEL SLOPE = 0.1814
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1507 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.72
 FLOW VELOCITY(FEET/SEC) = 2.17 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 8.24 Tc(MIN.) = 13.85
 LONGEST FLOWPATH FROM NODE 1328.00 TO NODE 1326.00 = 1155.00 FEET.

FLOW PROCESS FROM NODE 1327.00 TO NODE 1326.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.780
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3017
 SUBAREA AREA(ACRES) = 6.90 SUBAREA RUNOFF(CFS) = 9.90
 TOTAL AREA(ACRES) = 7.1 TOTAL RUNOFF(CFS) = 10.30
 TC(MIN.) = 13.85

FLOW PROCESS FROM NODE 1326.00 TO NODE 1326.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 13.85
 RAINFALL INTENSITY(INCH/HR) = 4.78
 TOTAL STREAM AREA(ACRES) = 7.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.30

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	23.30	10.66	5.660	8.70
2	10.30	13.85	4.780	7.14

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RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	31.23	10.66	5.660
2	29.98	13.85	4.780

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 31.23 Tc(MIN.) = 10.66

TOTAL AREA(ACRES) = 15.8

LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1326.00 = 1950.00 FEET.

FLOW PROCESS FROM NODE 1326.00 TO NODE 1303.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1120.00 DOWNSTREAM(FEET) = 835.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 965.00 CHANNEL SLOPE = 0.2953
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1938 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 31.23
FLOW VELOCITY(FEET/SEC) = 7.76 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.07 Tc(MIN.) = 12.73
LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1303.00 = 2915.00 FEET.

FLOW PROCESS FROM NODE 1326.00 TO NODE 1303.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.046
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3503
SUBAREA AREA(ACRES) = 8.99 SUBAREA RUNOFF(CFS) = 12.25
TOTAL AREA(ACRES) = 24.8 TOTAL RUNOFF(CFS) = 43.90
TC(MIN.) = 12.73

FLOW PROCESS FROM NODE 1303.00 TO NODE 1303.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

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** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	43.90	12.73	5.046	24.83

LONGEST FLOWPATH FROM NODE 1353.00 TO NODE 1303.00 = 2915.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	63.53	16.30	4.303	32.18

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1303.00 = 3365.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	93.51	12.73	5.046
2	100.95	16.30	4.303

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 100.95 Tc(MIN.) = 16.30
 TOTAL AREA(ACRES) = 57.0

FLOW PROCESS FROM NODE 1303.00 TO NODE 1303.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	100.95	16.30	4.303	57.01

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1303.00 = 3365.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	49.90	14.74	4.592	31.10

LONGEST FLOWPATH FROM NODE 2564.00 TO NODE 1303.00 = 2985.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	141.15	14.74	4.592
2	147.71	16.30	4.303

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

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PEAK FLOW RATE(CFS) =      147.71   Tc(MIN.) =   16.30
TOTAL AREA(ACRES) =      88.1

*****
FLOW PROCESS FROM NODE    1303.00 TO NODE    1303.00 IS CODE =   12
-----
>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE    1303.00 TO NODE    1303.00 IS CODE =   12
-----
>>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

*****
FLOW PROCESS FROM NODE    1303.00 TO NODE    1302.00 IS CODE =   53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =    835.00   DOWNSTREAM(FEET) =    775.00
CHANNEL LENGTH THRU SUBAREA(FEET) =    520.00   CHANNEL SLOPE =    0.1154
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1115 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) =      147.71
FLOW VELOCITY(FEET/SEC) =    9.87 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) =    0.88   Tc(MIN.) =    17.18
LONGEST FLOWPATH FROM NODE    1321.00 TO NODE    1302.00 =    3885.00 FEET.

*****
FLOW PROCESS FROM NODE    1303.00 TO NODE    1302.00 IS CODE =   81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    4.160
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2900
S.C.S. CURVE NUMBER (AMC II) =    0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3802
SUBAREA AREA(ACRES) =    9.18   SUBAREA RUNOFF(CFS) =    11.07
TOTAL AREA(ACRES) =    97.3   TOTAL RUNOFF(CFS) =    153.87
TC(MIN.) =    17.18

*****
FLOW PROCESS FROM NODE    1302.00 TO NODE    1302.00 IS CODE =   10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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=====
*****
FLOW PROCESS FROM NODE    1339.00 TO NODE    1338.00 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
UPSTREAM ELEVATION(FEET) =    1284.00
DOWNSTREAM ELEVATION(FEET) =    1282.00
ELEVATION DIFFERENCE(FEET) =     2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.362
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.185
SUBAREA RUNOFF(CFS) =      0.22
TOTAL AREA(ACRES) =      0.06  TOTAL RUNOFF(CFS) =      0.22

*****
FLOW PROCESS FROM NODE    1338.00 TO NODE    1337.80 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1282.00  DOWNSTREAM ELEVATION(FEET) = 1276.00
STREET LENGTH(FEET) =   165.00  CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =   18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =    8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0150

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.89
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =   0.21
  HALFSTREET FLOOD WIDTH(FEET) =    4.32
  AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.10
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.66
  STREET FLOW TRAVEL TIME(MIN.) =   0.89  Tc(MIN.) =    8.25
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =   6.676
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
```

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S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.98 SUBAREA RUNOFF(CFS) = 3.34
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.54

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.31
 FLOW VELOCITY(FEET/SEC.) = 3.43 DEPTH*VELOCITY(FT*FT/SEC.) = 0.87
 LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1337.80 = 250.00 FEET.

FLOW PROCESS FROM NODE 1337.80 TO NODE 1337.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1270.00 DOWNSTREAM(FEET) = 1266.00
 FLOW LENGTH(FEET) = 255.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.09
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.54
 PIPE TRAVEL TIME(MIN.) = 0.70 Tc(MIN.) = 8.95
 LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1337.60 = 505.00 FEET.

FLOW PROCESS FROM NODE 1337.60 TO NODE 1337.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.95
 RAINFALL INTENSITY(INCH/HR) = 6.34
 TOTAL STREAM AREA(ACRES) = 1.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.54

FLOW PROCESS FROM NODE 1345.00 TO NODE 1344.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1277.00

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DOWNSTREAM ELEVATION(FEET) = 1275.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.49
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.49

*****
FLOW PROCESS FROM NODE 1344.00 TO NODE 1343.80 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1275.00 DOWNSTREAM ELEVATION(FEET) = 1272.00
STREET LENGTH(FEET) = 210.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.67
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.71
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.34
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.66
STREET FLOW TRAVEL TIME(MIN.) = 1.49 Tc(MIN.) = 8.49
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.553
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.518
SUBAREA AREA(ACRES) = 0.69 SUBAREA RUNOFF(CFS) = 2.35
TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 2.79

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.70
FLOW VELOCITY(FEET/SEC.) = 2.63 DEPTH*VELOCITY(FT*FT/SEC.) = 0.84
LONGEST FLOWPATH FROM NODE 1345.00 TO NODE 1343.80 = 290.00 FEET.

*****
FLOW PROCESS FROM NODE 1343.80 TO NODE 1337.60 IS CODE = 31

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-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 1266.50 DOWNSTREAM(FEET) = 1266.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.83
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.79
PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 8.66
LONGEST FLOWPATH FROM NODE 1345.00 TO NODE 1337.60 = 340.00 FEET.

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FLOW PROCESS FROM NODE 1337.60 TO NODE 1337.60 IS CODE = 1
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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
-----

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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.66
RAINFALL INTENSITY(INCH/HR) = 6.47
TOTAL STREAM AREA(ACRES) = 0.82
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.79

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	3.54	8.95	6.336	1.04
2	2.79	8.66	6.468	0.82

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	6.21	8.66	6.468
2	6.27	8.95	6.336

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 6.27 Tc(MIN.) = 8.95
TOTAL AREA(ACRES) = 1.9
LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1337.60 = 505.00 FEET.

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FLOW PROCESS FROM NODE 1337.60 TO NODE 1345.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1266.00 DOWNSTREAM(FEET) = 1264.00
FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.12
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.27
PIPE TRAVEL TIME(MIN.) = 0.29 Tc(MIN.) = 9.24
LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1345.60 = 630.00 FEET.

FLOW PROCESS FROM NODE 1345.60 TO NODE 1345.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.24
RAINFALL INTENSITY(INCH/HR) = 6.21
TOTAL STREAM AREA(ACRES) = 1.86
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.27

FLOW PROCESS FROM NODE 1345.90 TO NODE 1345.80 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1280.00
DOWNSTREAM ELEVATION(FEET) = 1278.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.773
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 80.00
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.582
SUBAREA RUNOFF(CFS) = 0.56
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.56

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FLOW PROCESS FROM NODE 1345.80 TO NODE 1343.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1278.00 DOWNSTREAM ELEVATION(FEET) = 1269.50
STREET LENGTH(FEET) = 315.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.89
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 8.57
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.39
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.01
STREET FLOW TRAVEL TIME(MIN.) = 1.55 Tc(MIN.) = 8.32
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.640
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5600
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.561
SUBAREA AREA(ACRES) = 1.25 SUBAREA RUNOFF(CFS) = 4.65
TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 5.14

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 10.97
FLOW VELOCITY(FEET/SEC.) = 3.89 DEPTH*VELOCITY(FT*FT/SEC.) = 1.34
LONGEST FLOWPATH FROM NODE 1345.90 TO NODE 1343.00 = 415.00 FEET.

FLOW PROCESS FROM NODE 1343.00 TO NODE 1345.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1264.50 DOWNSTREAM(FEET) = 1264.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

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DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.18
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.14
 PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 8.43
 LONGEST FLOWPATH FROM NODE 1345.90 TO NODE 1345.60 = 455.00 FEET.

FLOW PROCESS FROM NODE 1345.60 TO NODE 1345.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.43
 RAINFALL INTENSITY(INCH/HR) = 6.58
 TOTAL STREAM AREA(ACRES) = 1.38
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.14

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.27	9.24	6.205	1.86
2	5.14	8.43	6.585	1.38

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.05	8.43	6.585
2	11.11	9.24	6.205

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.11 Tc(MIN.) = 9.24
 TOTAL AREA(ACRES) = 3.2
 LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1345.60 = 630.00 FEET.

FLOW PROCESS FROM NODE 1345.60 TO NODE 1346.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1262.00
 FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013

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DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.29
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.11
PIPE TRAVEL TIME(MIN.) = 0.39 Tc(MIN.) = 9.63
LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1346.80 = 800.00 FEET.

FLOW PROCESS FROM NODE 1346.80 TO NODE 1346.80 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.63
RAINFALL INTENSITY(INCH/HR) = 6.04
TOTAL STREAM AREA(ACRES) = 3.24
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.11

FLOW PROCESS FROM NODE 1348.00 TO NODE 1347.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1275.00
DOWNSTREAM ELEVATION(FEET) = 1273.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 1347.00 TO NODE 1346.90 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1273.00 DOWNSTREAM ELEVATION(FEET) = 1265.00
STREET LENGTH(FEET) = 150.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020

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OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.14
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.21
HALFSTREET FLOOD WIDTH(Feet) = 4.12
AVERAGE FLOW VELOCITY(Feet/Sec.) = 3.72
PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 0.78
STREET FLOW TRAVEL TIME(Min.) = 0.67 Tc(Min.) = 7.67
100 YEAR RAINFALL INTENSITY(Inch/Hour) = 6.997
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.519
SUBAREA AREA(ACRES) = 0.97 SUBAREA RUNOFF(CFS) = 3.53
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 3.89

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.25 HALFSTREET FLOOD WIDTH(Feet) = 5.98
FLOW VELOCITY(Feet/Sec.) = 4.08 DEPTH*VELOCITY(Feet*Feet/Sec.) = 1.00
LONGEST FLOWPATH FROM NODE 1348.00 TO NODE 1346.90 = 230.00 FEET.

*****
FLOW PROCESS FROM NODE 1346.90 TO NODE 1346.80 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(Feet) = 1262.50 DOWNSTREAM(Feet) = 1262.00
FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(Inch) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 5.29
ESTIMATED PIPE DIAMETER(Inch) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.89
PIPE TRAVEL TIME(Min.) = 0.16 Tc(Min.) = 7.83
LONGEST FLOWPATH FROM NODE 1348.00 TO NODE 1346.80 = 280.00 FEET.

*****
FLOW PROCESS FROM NODE 1346.80 TO NODE 1346.80 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

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TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.83
RAINFALL INTENSITY(INCH/HR) = 6.91
TOTAL STREAM AREA(ACRES) = 1.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.89

FLOW PROCESS FROM NODE 1347.60 TO NODE 1347.50 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1270.00

DOWNSTREAM ELEVATION(FEET) = 1268.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.773

WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN

THE MAXIMUM OVERLAND FLOW LENGTH = 80.00

(Reference: Table 3-1B of Hydrology Manual)

THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.582

SUBAREA RUNOFF(CFS) = 0.65

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.65

FLOW PROCESS FROM NODE 1347.50 TO NODE 1347.40 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1268.00 DOWNSTREAM ELEVATION(FEET) = 1265.00

STREET LENGTH(FEET) = 110.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.96

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STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.32
 HALFSTREET FLOOD WIDTH(FEET) = 9.77
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.69
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.19
 STREET FLOW TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 7.27
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.244
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5400
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.542
 SUBAREA AREA(ACRES) = 1.69 SUBAREA RUNOFF(CFS) = 6.61
 TOTAL AREA(ACRES) = 1.8 PEAK FLOW RATE(CFS) = 7.23

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 12.59
 FLOW VELOCITY(FEET/SEC.) = 4.24 DEPTH*VELOCITY(FT*FT/SEC.) = 1.60
 LONGEST FLOWPATH FROM NODE 1347.60 TO NODE 1347.40 = 210.00 FEET.

FLOW PROCESS FROM NODE 1347.40 TO NODE 1346.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1262.50 DOWNSTREAM(FEET) = 1262.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.71
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.23
 PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 7.37
 LONGEST FLOWPATH FROM NODE 1347.60 TO NODE 1346.80 = 250.00 FEET.

FLOW PROCESS FROM NODE 1346.80 TO NODE 1346.80 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.37
 RAINFALL INTENSITY(INCH/HR) = 7.18
 TOTAL STREAM AREA(ACRES) = 1.84
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.23

** CONFLUENCE DATA **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.11	9.63	6.043	3.24
2	3.89	7.83	6.906	1.07
3	7.23	7.37	7.181	1.84

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.24	7.37	7.181
2	20.56	7.83	6.906
3	20.60	9.63	6.043

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.60 Tc(MIN.) = 9.63

TOTAL AREA(ACRES) = 6.2

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1346.80 = 800.00 FEET.

FLOW PROCESS FROM NODE 1346.80 TO NODE 1342.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1262.00 DOWNSTREAM(FEET) = 1261.50

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 7.78

ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.60

PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 9.74

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1342.00 = 850.00 FEET.

FLOW PROCESS FROM NODE 1342.00 TO NODE 1342.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.74

RAINFALL INTENSITY(INCH/HR) = 6.00

TOTAL STREAM AREA(ACRES) = 6.15

PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.60

P-13.TXT

FLOW PROCESS FROM NODE 1347.90 TO NODE 1347.80 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00

UPSTREAM ELEVATION(FEET) = 1272.00

DOWNSTREAM ELEVATION(FEET) = 1270.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.362

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.185

SUBAREA RUNOFF(CFS) = 0.37

TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.37

FLOW PROCESS FROM NODE 1347.80 TO NODE 1347.70 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1270.00 DOWNSTREAM ELEVATION(FEET) = 1269.00

STREET LENGTH(FEET) = 100.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.72

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.25

HALFSTREET FLOOD WIDTH(FEET) = 6.05

AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.78

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.44

STREET FLOW TRAVEL TIME(MIN.) = 0.94 Tc(MIN.) = 8.30

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.652

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

P-13.TXT
SUBAREA AREA(ACRES) = 0.80 SUBAREA RUNOFF(CFS) = 2.71
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 3.05

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.04
FLOW VELOCITY(FEET/SEC.) = 2.00 DEPTH*VELOCITY(FT*FT/SEC.) = 0.57
LONGEST FLOWPATH FROM NODE 1347.90 TO NODE 1347.70 = 185.00 FEET.

FLOW PROCESS FROM NODE 1347.70 TO NODE 1342.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1261.50
FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.96
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.05
PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 8.80
LONGEST FLOWPATH FROM NODE 1347.90 TO NODE 1342.00 = 335.00 FEET.

FLOW PROCESS FROM NODE 1342.00 TO NODE 1342.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.80
RAINFALL INTENSITY(INCH/HR) = 6.40
TOTAL STREAM AREA(ACRES) = 0.90
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.05

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.60	9.74	6.000	6.15
2	3.05	8.80	6.403	0.90

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM	RUNOFF	Tc	INTENSITY

P-13.TXT

NUMBER	(CFS)	(MIN.)	(INCH/HOUR)
1	22.35	8.80	6.403
2	23.46	9.74	6.000

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 23.46 Tc(MIN.) = 9.74

TOTAL AREA(ACRES) = 7.1

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1342.00 = 850.00 FEET.

FLOW PROCESS FROM NODE 1342.00 TO NODE 1341.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1261.50 DOWNSTREAM(Feet) = 1260.00

FLOW LENGTH(Feet) = 150.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 18.2 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 8.21

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 23.46

PIPE TRAVEL TIME(MIN.) = 0.30 Tc(MIN.) = 10.04

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1341.50 = 1000.00 FEET.

FLOW PROCESS FROM NODE 1341.50 TO NODE 1341.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1260.00 DOWNSTREAM(Feet) = 1259.50

CHANNEL LENGTH THRU SUBAREA(Feet) = 50.00 CHANNEL SLOPE = 0.0100

CHANNEL FLOW THRU SUBAREA(CFS) = 23.46

FLOW VELOCITY(Feet/Sec) = 3.13 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 10.31

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1341.00 = 1050.00 FEET.

FLOW PROCESS FROM NODE 1341.50 TO NODE 1341.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.783

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.5186

SUBAREA AREA(ACRES) = 0.51 SUBAREA RUNOFF(CFS) = 1.03

```

                                P-13.TXT
TOTAL AREA(ACRES) =          7.6   TOTAL RUNOFF(CFS) =          23.46
TC(MIN.) =    10.31
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

*****
FLOW PROCESS FROM NODE    1341.00 TO NODE    1340.80 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1253.00  DOWNSTREAM(FEET) = 1215.00
FLOW LENGTH(FEET) = 100.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 32.43
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 23.46
PIPE TRAVEL TIME(MIN.) = 0.05  Tc(MIN.) = 10.36
LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1340.80 = 1150.00 FEET.

*****
FLOW PROCESS FROM NODE    1340.80 TO NODE    1340.00 IS CODE =   53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1215.00  DOWNSTREAM(FEET) = 1030.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 800.00  CHANNEL SLOPE = 0.2313
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1737 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 23.46
FLOW VELOCITY(FEET/SEC) = 6.68 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.00  Tc(MIN.) = 12.36
LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1340.00 = 1950.00 FEET.

*****
FLOW PROCESS FROM NODE    1340.80 TO NODE    1340.00 IS CODE =   81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.145
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4067
SUBAREA AREA(ACRES) = 6.19  SUBAREA RUNOFF(CFS) = 8.60
TOTAL AREA(ACRES) = 13.8  TOTAL RUNOFF(CFS) = 28.77
TC(MIN.) = 12.36

```

P-13.TXT

```
*****
FLOW PROCESS FROM NODE    1340.00 TO NODE    1340.00 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS =  2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
TIME OF CONCENTRATION(MIN.) =   12.36
RAINFALL INTENSITY(INCH/HR) =   5.14
TOTAL STREAM AREA(ACRES) =   13.75
PEAK FLOW RATE(CFS) AT CONFLUENCE =       28.77

*****
FLOW PROCESS FROM NODE    1356.10 TO NODE    1350.00 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
UPSTREAM ELEVATION(FEET) =  1280.00
DOWNSTREAM ELEVATION(FEET) =  1235.00
ELEVATION DIFFERENCE(FEET) =    45.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.428
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) =        1.52
TOTAL AREA(ACRES) =        0.29  TOTAL RUNOFF(CFS) =        1.52

*****
FLOW PROCESS FROM NODE    1350.00 TO NODE    1340.00 IS CODE =   53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =  1235.00  DOWNSTREAM(FEET) =  1030.00
CHANNEL LENGTH THRU SUBAREA(FEET) =  600.00  CHANNEL SLOPE =  0.3417
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2038 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) =        1.52
FLOW VELOCITY(FEET/SEC) =   2.91 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) =   3.44  Tc(MIN.) =   7.87
LONGEST FLOWPATH FROM NODE    1356.10 TO NODE    1340.00 =   700.00 FEET.

*****
```

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FLOW PROCESS FROM NODE 1350.00 TO NODE 1340.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.885
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2941
 SUBAREA AREA(ACRES) = 5.66 SUBAREA RUNOFF(CFS) = 10.91
 TOTAL AREA(ACRES) = 5.9 TOTAL RUNOFF(CFS) = 12.05
 TC(MIN.) = 7.87

FLOW PROCESS FROM NODE 1340.00 TO NODE 1340.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.87
 RAINFALL INTENSITY(INCH/HR) = 6.88
 TOTAL STREAM AREA(ACRES) = 5.95
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.05

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	28.77	12.36	5.145	13.75
2	12.05	7.87	6.885	5.95

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	33.55	7.87	6.885
2	37.77	12.36	5.145

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 37.77 Tc(MIN.) = 12.36
 TOTAL AREA(ACRES) = 19.7
 LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1340.00 = 1950.00 FEET.

FLOW PROCESS FROM NODE 1340.00 TO NODE 1302.00 IS CODE = 53

 >>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1030.00 DOWNSTREAM(FEET) = 775.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1505.00 CHANNEL SLOPE = 0.1694
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1447 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 37.77
 FLOW VELOCITY(FEET/SEC) = 7.14 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.51 Tc(MIN.) = 15.87
 LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1302.00 = 3455.00 FEET.

FLOW PROCESS FROM NODE 1340.00 TO NODE 1302.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.378
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3202
 SUBAREA AREA(ACRES) = 25.68 SUBAREA RUNOFF(CFS) = 31.48
 TOTAL AREA(ACRES) = 45.4 TOTAL RUNOFF(CFS) = 63.62
 TC(MIN.) = 15.87

FLOW PROCESS FROM NODE 1302.00 TO NODE 1302.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<
 =====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	63.62	15.87	4.378	45.38

LONGEST FLOWPATH FROM NODE 1339.00 TO NODE 1302.00 = 3455.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	153.87	17.18	4.160	97.29

LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1302.00 = 3885.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)

			P-13.TXT
1	205.75	15.87	4.378
2	214.31	17.18	4.160

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 214.31 Tc(MIN.) = 17.18
TOTAL AREA(ACRES) = 142.7

FLOW PROCESS FROM NODE 1302.00 TO NODE 1302.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 1302.00 TO NODE 1301.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 775.00 DOWNSTREAM(FEET) = 760.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 220.00 CHANNEL SLOPE = 0.0682
CHANNEL FLOW THRU SUBAREA(CFS) = 214.31
FLOW VELOCITY(FEET/SEC) = 15.65 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 17.41
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 1301.00 = 4105.00 FEET.

FLOW PROCESS FROM NODE 1301.00 TO NODE 13.00 IS CODE = 41

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 760.00 DOWNSTREAM(FEET) = 670.00
FLOW LENGTH(FEET) = 665.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 27.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 37.37
GIVEN PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 214.31
PIPE TRAVEL TIME(MIN.) = 0.30 Tc(MIN.) = 17.71
LONGEST FLOWPATH FROM NODE 1321.00 TO NODE 13.00 = 4770.00 FEET.

=====

END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 142.7 TC(MIN.) = 17.71
PEAK FLOW RATE(CFS) = 214.31
=====

=====

END OF RATIONAL METHOD ANALYSIS

P-13.TXT



Node to Node		Code	C Factor	Area (ac.)	C x A
1321	1320	2	0.57	0.22	0.13
1320	1319	6	0.52	4.03	2.10
1316	1315	2	0.51	0.09	0.05
1315	1314	6	0.51	2.93	1.49
1312	1311	2	0.51	0.11	0.06
1311	1310	5	0.51	0.51	0.26
1318	1317	2	0.51	0.15	0.08
1317	1309	6	0.51	0.47	0.24
1308	1307	5	0.53	0.93	0.49
1323	1322	2	0.57	0.15	0.09
1322	1306	6	0.57	4.48	2.55
			Total	14.07	7.53
			Avg C =	0.53	

Detention 1307, Center of Mesa

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 15 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 14.1 ACRES

RUNOFF COEFFICIENT 0.53

PEAK DISCHARGE 36.7 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 15 DISCHARGE (CFS) = 1.6

TIME (MIN) = 30 DISCHARGE (CFS) = 1.6

TIME (MIN) = 45 DISCHARGE (CFS) = 1.7

TIME (MIN) = 60 DISCHARGE (CFS) = 1.8

TIME (MIN) = 75 DISCHARGE (CFS) = 1.9

TIME (MIN) = 90 DISCHARGE (CFS) = 2

TIME (MIN) = 105 DISCHARGE (CFS) = 2.1

TIME (MIN) = 120 DISCHARGE (CFS) = 2.2

TIME (MIN) = 135 DISCHARGE (CFS) = 2.5

TIME (MIN) = 150 DISCHARGE (CFS) = 2.6

TIME (MIN) = 165 DISCHARGE (CFS) = 3

TIME (MIN) = 180 DISCHARGE (CFS) = 3.3

TIME (MIN) = 195 DISCHARGE (CFS) = 4

TIME (MIN) = 210 DISCHARGE (CFS) = 4.6

TIME (MIN) = 225 DISCHARGE (CFS) = 6.7

TIME (MIN) = 240 DISCHARGE (CFS) = 6.7

TIME (MIN) = 255 DISCHARGE (CFS) = 36.7

TIME (MIN) = 270 DISCHARGE (CFS) = 5.4

TIME (MIN) = 285 DISCHARGE (CFS) = 3.6

TIME (MIN) = 300 DISCHARGE (CFS) = 2.8

TIME (MIN) = 315 DISCHARGE (CFS) = 2.4

TIME (MIN) = 330 DISCHARGE (CFS) = 2.1

TIME (MIN) = 345 DISCHARGE (CFS) = 1.8

TIME (MIN) = 360 DISCHARGE (CFS) = 1.7

TIME (MIN) = 375 DISCHARGE (CFS) = 0

Detention 1307 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing the 'Basin Inflow' element selected. The bottom pane shows the configuration for the 'Basin Inflow' element, with tabs for 'Source', 'Inflow', and 'Options'. The 'Inflow' tab is active, displaying the following configuration:

Basin Name: Basin 1307
Element Name: Basin Inflow

Description:	Node 2118.6	
Downstream:	Detention Basin 1307	
Area (MI2)	0.029	
Flow Method:	Discharge Gage	

Detention 1307 Pr

Basin Models

Basin 1307

Basin Inflow

Discharge Gage

Detention Basin 1307

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 1307 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:15

Paired Data

Elevation-Storage Functions

Basin 1307 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 1307

Element Name: Detention Basin 1307

Method: Orifice Outlet

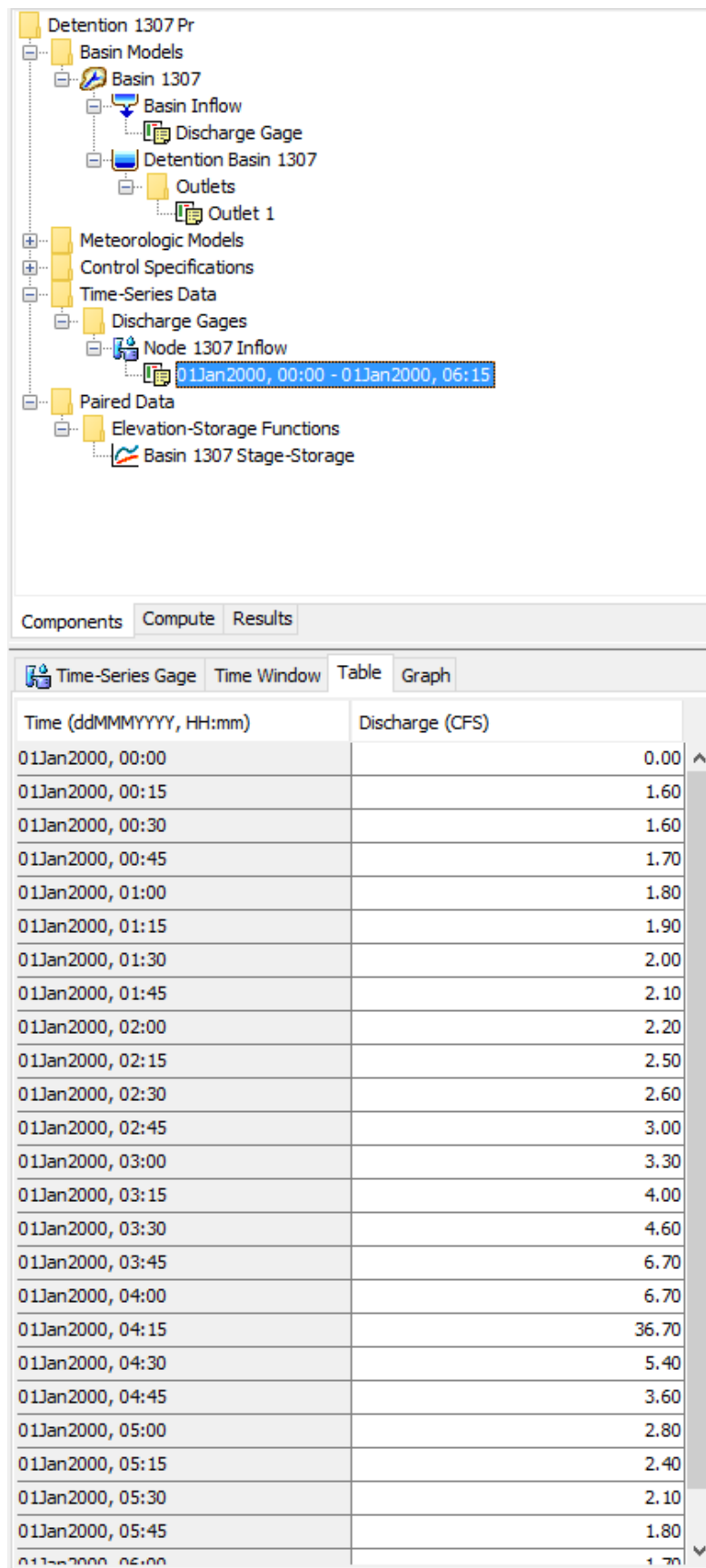
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.875

*Area (FT2) 2.405

*Coefficient: 0.6



Detention 1307 Pr

Basin Models

Basin 1307

Basin Inflow

Discharge Gage

Detention Basin 1307

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 1307 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:15

Paired Data

Elevation-Storage Functions

Basin 1307 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	1.873

Project: Detention 1307 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1307

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 1307
End of Run:	01Jan2000, 06:15	Meteorologic Model:	Sierra
Compute Time:	10Jan2017, 10:38:50	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	36.7 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:15
Peak Discharge:	13.1 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:26
Inflow Volume:	2.2 (AC-FT)	Peak Storage:	1.0 (AC-FT)
Discharge Volume:	2.2 (AC-FT)	Peak Elevation:	2.1 (FT)

Observed Hydrograph at Gage Node 1307 Inflow

Peak Discharge:	36.7 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:15
Mean Abs Error:	2.3 (CFS)	RMS Error:	4.8 (CFS)
Volume:	2.2 (AC-FT)	Volume Residual:	-0.0 (AC-FT)
Nash-Sutcliffe:	0.323		

Project: Detention 1307 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1307

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 1307
End of Run: 01Jan2000, 06:15 Meteorologic Model: Sierra
Compute Time: 10Jan2017, 10:38:50 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.4	0.9	0.0	0.0
01Jan2000	00:01	0.1	0.4	0.9	0.1	0.1
01Jan2000	00:02	0.2	0.4	0.9	0.2	0.2
01Jan2000	00:03	0.3	0.4	0.9	0.2	0.3
01Jan2000	00:04	0.4	0.4	0.9	0.3	0.4
01Jan2000	00:05	0.5	0.4	0.9	0.4	0.5
01Jan2000	00:06	0.6	0.4	0.9	0.5	0.6
01Jan2000	00:07	0.7	0.4	0.9	0.5	0.7
01Jan2000	00:08	0.9	0.4	0.9	0.6	0.9
01Jan2000	00:09	1.0	0.4	0.9	0.7	1.0
01Jan2000	00:10	1.1	0.4	0.9	0.8	1.1
01Jan2000	00:11	1.2	0.4	0.9	0.8	1.2
01Jan2000	00:12	1.3	0.4	0.9	0.9	1.3
01Jan2000	00:13	1.4	0.4	0.9	1.0	1.4
01Jan2000	00:14	1.5	0.4	0.9	1.1	1.5
01Jan2000	00:15	1.6	0.4	0.9	1.2	1.6
01Jan2000	00:16	1.6	0.4	0.9	1.2	1.6
01Jan2000	00:17	1.6	0.4	0.9	1.3	1.6
01Jan2000	00:18	1.6	0.4	0.9	1.3	1.6
01Jan2000	00:19	1.6	0.4	0.9	1.4	1.6
01Jan2000	00:20	1.6	0.4	0.9	1.4	1.6
01Jan2000	00:21	1.6	0.4	0.9	1.4	1.6
01Jan2000	00:22	1.6	0.4	0.9	1.4	1.6
01Jan2000	00:23	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:24	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:25	1.6	0.4	0.9	1.5	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:27	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:28	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:29	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:30	1.6	0.4	0.9	1.5	1.6
01Jan2000	00:31	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:32	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:33	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:34	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:35	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:36	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:37	1.6	0.4	0.9	1.6	1.6
01Jan2000	00:38	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:39	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:40	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:41	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:42	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:43	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:44	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:45	1.7	0.4	0.9	1.6	1.7
01Jan2000	00:46	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:47	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:48	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:49	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:50	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:51	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:52	1.7	0.4	0.9	1.7	1.7
01Jan2000	00:53	1.8	0.4	0.9	1.7	1.8
01Jan2000	00:54	1.8	0.4	0.9	1.7	1.8
01Jan2000	00:55	1.8	0.4	0.9	1.7	1.8
01Jan2000	00:56	1.8	0.4	0.9	1.7	1.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.8	0.4	0.9	1.7	1.8
01Jan2000	00:58	1.8	0.4	0.9	1.7	1.8
01Jan2000	00:59	1.8	0.4	0.9	1.7	1.8
01Jan2000	01:00	1.8	0.4	0.9	1.7	1.8
01Jan2000	01:01	1.8	0.4	0.9	1.7	1.8
01Jan2000	01:02	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:03	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:04	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:05	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:06	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:07	1.8	0.4	0.9	1.8	1.8
01Jan2000	01:08	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:09	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:10	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:11	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:12	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:13	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:14	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:15	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:16	1.9	0.4	0.9	1.8	1.9
01Jan2000	01:17	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:18	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:19	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:20	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:21	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:22	1.9	0.4	0.9	1.9	1.9
01Jan2000	01:23	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:24	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:25	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:26	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:27	2.0	0.4	0.9	1.9	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:29	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:30	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:31	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:32	2.0	0.4	0.9	1.9	2.0
01Jan2000	01:33	2.0	0.4	0.9	2.0	2.0
01Jan2000	01:34	2.0	0.4	0.9	2.0	2.0
01Jan2000	01:35	2.0	0.4	0.9	2.0	2.0
01Jan2000	01:36	2.0	0.4	0.9	2.0	2.0
01Jan2000	01:37	2.0	0.4	0.9	2.0	2.0
01Jan2000	01:38	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:39	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:40	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:41	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:42	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:43	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:44	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:45	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:46	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:47	2.1	0.4	0.9	2.0	2.1
01Jan2000	01:48	2.1	0.4	0.9	2.1	2.1
01Jan2000	01:49	2.1	0.4	0.9	2.1	2.1
01Jan2000	01:50	2.1	0.4	0.9	2.1	2.1
01Jan2000	01:51	2.1	0.4	0.9	2.1	2.1
01Jan2000	01:52	2.1	0.4	0.9	2.1	2.1
01Jan2000	01:53	2.2	0.4	0.9	2.1	2.2
01Jan2000	01:54	2.2	0.4	0.9	2.1	2.2
01Jan2000	01:55	2.2	0.4	0.9	2.1	2.2
01Jan2000	01:56	2.2	0.4	0.9	2.1	2.2
01Jan2000	01:57	2.2	0.4	0.9	2.1	2.2
01Jan2000	01:58	2.2	0.4	0.9	2.1	2.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	2.2	0.4	0.9	2.1	2.2
01Jan2000	02:00	2.2	0.4	0.9	2.1	2.2
01Jan2000	02:01	2.2	0.4	0.9	2.1	2.2
01Jan2000	02:02	2.2	0.4	0.9	2.1	2.2
01Jan2000	02:03	2.3	0.4	0.9	2.2	2.3
01Jan2000	02:04	2.3	0.4	0.9	2.2	2.3
01Jan2000	02:05	2.3	0.4	0.9	2.2	2.3
01Jan2000	02:06	2.3	0.4	0.9	2.2	2.3
01Jan2000	02:07	2.3	0.4	0.9	2.2	2.3
01Jan2000	02:08	2.4	0.4	0.9	2.2	2.4
01Jan2000	02:09	2.4	0.4	0.9	2.2	2.4
01Jan2000	02:10	2.4	0.4	0.9	2.2	2.4
01Jan2000	02:11	2.4	0.4	0.9	2.3	2.4
01Jan2000	02:12	2.4	0.4	0.9	2.3	2.4
01Jan2000	02:13	2.5	0.4	0.9	2.3	2.5
01Jan2000	02:14	2.5	0.4	0.9	2.3	2.5
01Jan2000	02:15	2.5	0.4	0.9	2.3	2.5
01Jan2000	02:16	2.5	0.4	0.9	2.3	2.5
01Jan2000	02:17	2.5	0.4	0.9	2.3	2.5
01Jan2000	02:18	2.5	0.4	0.9	2.4	2.5
01Jan2000	02:19	2.5	0.4	0.9	2.4	2.5
01Jan2000	02:20	2.5	0.4	0.9	2.4	2.5
01Jan2000	02:21	2.5	0.4	0.9	2.4	2.5
01Jan2000	02:22	2.5	0.4	0.9	2.4	2.5
01Jan2000	02:23	2.6	0.4	0.9	2.4	2.6
01Jan2000	02:24	2.6	0.4	0.9	2.4	2.6
01Jan2000	02:25	2.6	0.4	0.9	2.4	2.6
01Jan2000	02:26	2.6	0.4	0.9	2.5	2.6
01Jan2000	02:27	2.6	0.4	0.9	2.5	2.6
01Jan2000	02:28	2.6	0.4	0.9	2.5	2.6
01Jan2000	02:29	2.6	0.4	0.9	2.5	2.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	2.6	0.4	0.9	2.5	2.6
01Jan2000	02:31	2.6	0.4	0.9	2.5	2.6
01Jan2000	02:32	2.7	0.4	0.9	2.5	2.7
01Jan2000	02:33	2.7	0.4	0.9	2.5	2.7
01Jan2000	02:34	2.7	0.4	0.9	2.5	2.7
01Jan2000	02:35	2.7	0.4	0.9	2.5	2.7
01Jan2000	02:36	2.8	0.4	0.9	2.6	2.8
01Jan2000	02:37	2.8	0.4	0.9	2.6	2.8
01Jan2000	02:38	2.8	0.4	0.9	2.6	2.8
01Jan2000	02:39	2.8	0.4	0.9	2.6	2.8
01Jan2000	02:40	2.9	0.4	0.9	2.6	2.9
01Jan2000	02:41	2.9	0.4	0.9	2.6	2.9
01Jan2000	02:42	2.9	0.4	0.9	2.7	2.9
01Jan2000	02:43	2.9	0.4	0.9	2.7	2.9
01Jan2000	02:44	3.0	0.4	0.9	2.7	3.0
01Jan2000	02:45	3.0	0.4	0.9	2.7	3.0
01Jan2000	02:46	3.0	0.4	0.9	2.7	3.0
01Jan2000	02:47	3.0	0.4	0.9	2.8	3.0
01Jan2000	02:48	3.1	0.4	0.9	2.8	3.1
01Jan2000	02:49	3.1	0.4	0.9	2.8	3.1
01Jan2000	02:50	3.1	0.4	0.9	2.8	3.1
01Jan2000	02:51	3.1	0.4	0.9	2.8	3.1
01Jan2000	02:52	3.1	0.4	0.9	2.9	3.1
01Jan2000	02:53	3.2	0.4	0.9	2.9	3.2
01Jan2000	02:54	3.2	0.4	0.9	2.9	3.2
01Jan2000	02:55	3.2	0.4	0.9	2.9	3.2
01Jan2000	02:56	3.2	0.4	0.9	2.9	3.2
01Jan2000	02:57	3.2	0.4	0.9	3.0	3.2
01Jan2000	02:58	3.3	0.4	0.9	3.0	3.3
01Jan2000	02:59	3.3	0.4	0.9	3.0	3.3
01Jan2000	03:00	3.3	0.4	0.9	3.0	3.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	3.3	0.4	0.9	3.0	3.3
01Jan2000	03:02	3.4	0.4	0.9	3.1	3.4
01Jan2000	03:03	3.4	0.4	0.9	3.1	3.4
01Jan2000	03:04	3.5	0.4	0.9	3.1	3.5
01Jan2000	03:05	3.5	0.4	0.9	3.1	3.5
01Jan2000	03:06	3.6	0.4	0.9	3.2	3.6
01Jan2000	03:07	3.6	0.4	1.0	3.2	3.6
01Jan2000	03:08	3.7	0.4	1.0	3.2	3.7
01Jan2000	03:09	3.7	0.4	1.0	3.2	3.7
01Jan2000	03:10	3.8	0.4	1.0	3.3	3.8
01Jan2000	03:11	3.8	0.4	1.0	3.3	3.8
01Jan2000	03:12	3.9	0.4	1.0	3.3	3.9
01Jan2000	03:13	3.9	0.4	1.0	3.4	3.9
01Jan2000	03:14	4.0	0.4	1.0	3.4	4.0
01Jan2000	03:15	4.0	0.5	1.0	3.4	4.0
01Jan2000	03:16	4.0	0.5	1.0	3.5	4.0
01Jan2000	03:17	4.1	0.5	1.0	3.5	4.1
01Jan2000	03:18	4.1	0.5	1.0	3.5	4.1
01Jan2000	03:19	4.2	0.5	1.0	3.6	4.2
01Jan2000	03:20	4.2	0.5	1.0	3.6	4.2
01Jan2000	03:21	4.2	0.5	1.0	3.6	4.2
01Jan2000	03:22	4.3	0.5	1.0	3.7	4.3
01Jan2000	03:23	4.3	0.5	1.0	3.7	4.3
01Jan2000	03:24	4.4	0.5	1.0	3.7	4.4
01Jan2000	03:25	4.4	0.5	1.0	3.8	4.4
01Jan2000	03:26	4.4	0.5	1.0	3.8	4.4
01Jan2000	03:27	4.5	0.5	1.0	3.8	4.5
01Jan2000	03:28	4.5	0.5	1.0	3.9	4.5
01Jan2000	03:29	4.6	0.5	1.0	3.9	4.6
01Jan2000	03:30	4.6	0.5	1.0	3.9	4.6
01Jan2000	03:31	4.7	0.5	1.0	4.0	4.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	4.9	0.5	1.0	4.0	4.9
01Jan2000	03:33	5.0	0.5	1.0	4.0	5.0
01Jan2000	03:34	5.2	0.5	1.0	4.1	5.2
01Jan2000	03:35	5.3	0.5	1.0	4.2	5.3
01Jan2000	03:36	5.4	0.5	1.0	4.2	5.4
01Jan2000	03:37	5.6	0.5	1.0	4.3	5.6
01Jan2000	03:38	5.7	0.5	1.0	4.3	5.7
01Jan2000	03:39	5.9	0.5	1.0	4.4	5.9
01Jan2000	03:40	6.0	0.5	1.0	4.5	6.0
01Jan2000	03:41	6.1	0.5	1.0	4.5	6.1
01Jan2000	03:42	6.3	0.5	1.0	4.6	6.3
01Jan2000	03:43	6.4	0.5	1.0	4.7	6.4
01Jan2000	03:44	6.6	0.5	1.0	4.7	6.6
01Jan2000	03:45	6.7	0.5	1.0	4.8	6.7
01Jan2000	03:46	6.7	0.5	1.1	4.9	6.7
01Jan2000	03:47	6.7	0.5	1.1	5.0	6.7
01Jan2000	03:48	6.7	0.5	1.1	5.0	6.7
01Jan2000	03:49	6.7	0.5	1.1	5.1	6.7
01Jan2000	03:50	6.7	0.5	1.1	5.2	6.7
01Jan2000	03:51	6.7	0.5	1.1	5.2	6.7
01Jan2000	03:52	6.7	0.5	1.1	5.3	6.7
01Jan2000	03:53	6.7	0.5	1.1	5.3	6.7
01Jan2000	03:54	6.7	0.5	1.1	5.4	6.7
01Jan2000	03:55	6.7	0.5	1.1	5.4	6.7
01Jan2000	03:56	6.7	0.5	1.1	5.5	6.7
01Jan2000	03:57	6.7	0.5	1.1	5.5	6.7
01Jan2000	03:58	6.7	0.5	1.1	5.6	6.7
01Jan2000	03:59	6.7	0.5	1.1	5.6	6.7
01Jan2000	04:00	6.7	0.5	1.1	5.6	6.7
01Jan2000	04:01	8.7	0.5	1.1	5.7	8.7
01Jan2000	04:02	10.7	0.5	1.1	5.8	10.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	12.7	0.5	1.1	6.0	12.7
01Jan2000	04:04	14.7	0.5	1.2	6.3	14.7
01Jan2000	04:05	16.7	0.6	1.2	6.6	16.7
01Jan2000	04:06	18.7	0.6	1.2	6.9	18.7
01Jan2000	04:07	20.7	0.6	1.3	7.2	20.7
01Jan2000	04:08	22.7	0.6	1.3	7.6	22.7
01Jan2000	04:09	24.7	0.6	1.4	8.0	24.7
01Jan2000	04:10	26.7	0.7	1.4	8.4	26.7
01Jan2000	04:11	28.7	0.7	1.5	8.9	28.7
01Jan2000	04:12	30.7	0.7	1.5	9.3	30.7
01Jan2000	04:13	32.7	0.7	1.6	9.8	32.7
01Jan2000	04:14	34.7	0.8	1.7	10.2	34.7
01Jan2000	04:15	36.7	0.8	1.7	10.7	36.7
01Jan2000	04:16	34.6	0.8	1.8	11.2	34.6
01Jan2000	04:17	32.5	0.9	1.9	11.5	32.5
01Jan2000	04:18	30.4	0.9	1.9	11.9	30.4
01Jan2000	04:19	28.4	0.9	2.0	12.2	28.4
01Jan2000	04:20	26.3	0.9	2.0	12.4	26.3
01Jan2000	04:21	24.2	1.0	2.1	12.6	24.2
01Jan2000	04:22	22.1	1.0	2.1	12.8	22.1
01Jan2000	04:23	20.0	1.0	2.1	12.9	20.0
01Jan2000	04:24	17.9	1.0	2.1	13.0	17.9
01Jan2000	04:25	15.8	1.0	2.1	13.0	15.8
01Jan2000	04:26	13.7	1.0	2.1	13.1	13.7
01Jan2000	04:27	11.7	1.0	2.1	13.1	11.7
01Jan2000	04:28	9.6	1.0	2.1	13.0	9.6
01Jan2000	04:29	7.5	1.0	2.1	13.0	7.5
01Jan2000	04:30	5.4	1.0	2.1	12.9	5.4
01Jan2000	04:31	5.3	1.0	2.1	12.7	5.3
01Jan2000	04:32	5.2	1.0	2.1	12.6	5.2
01Jan2000	04:33	5.0	1.0	2.0	12.5	5.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	4.9	0.9	2.0	12.4	4.9
01Jan2000	04:35	4.8	0.9	2.0	12.3	4.8
01Jan2000	04:36	4.7	0.9	2.0	12.2	4.7
01Jan2000	04:37	4.6	0.9	2.0	12.0	4.6
01Jan2000	04:38	4.4	0.9	1.9	11.9	4.4
01Jan2000	04:39	4.3	0.9	1.9	11.8	4.3
01Jan2000	04:40	4.2	0.9	1.9	11.7	4.2
01Jan2000	04:41	4.1	0.9	1.9	11.5	4.1
01Jan2000	04:42	4.0	0.9	1.8	11.4	4.0
01Jan2000	04:43	3.8	0.9	1.8	11.3	3.8
01Jan2000	04:44	3.7	0.8	1.8	11.1	3.7
01Jan2000	04:45	3.6	0.8	1.8	11.0	3.6
01Jan2000	04:46	3.5	0.8	1.8	10.9	3.5
01Jan2000	04:47	3.5	0.8	1.7	10.7	3.5
01Jan2000	04:48	3.4	0.8	1.7	10.6	3.4
01Jan2000	04:49	3.4	0.8	1.7	10.5	3.4
01Jan2000	04:50	3.3	0.8	1.7	10.3	3.3
01Jan2000	04:51	3.3	0.8	1.7	10.2	3.3
01Jan2000	04:52	3.2	0.8	1.6	10.1	3.2
01Jan2000	04:53	3.2	0.8	1.6	9.9	3.2
01Jan2000	04:54	3.1	0.7	1.6	9.8	3.1
01Jan2000	04:55	3.1	0.7	1.6	9.7	3.1
01Jan2000	04:56	3.0	0.7	1.6	9.5	3.0
01Jan2000	04:57	3.0	0.7	1.5	9.4	3.0
01Jan2000	04:58	2.9	0.7	1.5	9.3	2.9
01Jan2000	04:59	2.9	0.7	1.5	9.1	2.9
01Jan2000	05:00	2.8	0.7	1.5	9.0	2.8
01Jan2000	05:01	2.8	0.7	1.5	8.9	2.8
01Jan2000	05:02	2.7	0.7	1.4	8.7	2.7
01Jan2000	05:03	2.7	0.7	1.4	8.6	2.7
01Jan2000	05:04	2.7	0.7	1.4	8.5	2.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	2.7	0.7	1.4	8.3	2.7
01Jan2000	05:06	2.6	0.6	1.4	8.2	2.6
01Jan2000	05:07	2.6	0.6	1.4	8.1	2.6
01Jan2000	05:08	2.6	0.6	1.3	7.9	2.6
01Jan2000	05:09	2.6	0.6	1.3	7.8	2.6
01Jan2000	05:10	2.5	0.6	1.3	7.7	2.5
01Jan2000	05:11	2.5	0.6	1.3	7.5	2.5
01Jan2000	05:12	2.5	0.6	1.3	7.4	2.5
01Jan2000	05:13	2.5	0.6	1.3	7.3	2.5
01Jan2000	05:14	2.4	0.6	1.3	7.1	2.4
01Jan2000	05:15	2.4	0.6	1.2	7.0	2.4
01Jan2000	05:16	2.4	0.6	1.2	6.9	2.4
01Jan2000	05:17	2.4	0.6	1.2	6.7	2.4
01Jan2000	05:18	2.3	0.6	1.2	6.6	2.3
01Jan2000	05:19	2.3	0.6	1.2	6.5	2.3
01Jan2000	05:20	2.3	0.6	1.2	6.4	2.3
01Jan2000	05:21	2.3	0.5	1.2	6.2	2.3
01Jan2000	05:22	2.3	0.5	1.2	6.1	2.3
01Jan2000	05:23	2.2	0.5	1.1	6.0	2.2
01Jan2000	05:24	2.2	0.5	1.1	5.9	2.2
01Jan2000	05:25	2.2	0.5	1.1	5.7	2.2
01Jan2000	05:26	2.2	0.5	1.1	5.6	2.2
01Jan2000	05:27	2.2	0.5	1.1	5.5	2.2
01Jan2000	05:28	2.1	0.5	1.1	5.4	2.1
01Jan2000	05:29	2.1	0.5	1.1	5.3	2.1
01Jan2000	05:30	2.1	0.5	1.1	5.2	2.1
01Jan2000	05:31	2.1	0.5	1.1	5.0	2.1
01Jan2000	05:32	2.1	0.5	1.1	4.9	2.1
01Jan2000	05:33	2.0	0.5	1.0	4.8	2.0
01Jan2000	05:34	2.0	0.5	1.0	4.7	2.0
01Jan2000	05:35	2.0	0.5	1.0	4.6	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	2.0	0.5	1.0	4.5	2.0
01Jan2000	05:37	2.0	0.5	1.0	4.4	2.0
01Jan2000	05:38	1.9	0.5	1.0	4.3	1.9
01Jan2000	05:39	1.9	0.5	1.0	4.1	1.9
01Jan2000	05:40	1.9	0.5	1.0	4.0	1.9
01Jan2000	05:41	1.9	0.5	1.0	3.9	1.9
01Jan2000	05:42	1.9	0.5	1.0	3.8	1.9
01Jan2000	05:43	1.8	0.5	1.0	3.7	1.8
01Jan2000	05:44	1.8	0.5	1.0	3.6	1.8
01Jan2000	05:45	1.8	0.5	1.0	3.5	1.8
01Jan2000	05:46	1.8	0.5	1.0	3.4	1.8
01Jan2000	05:47	1.8	0.4	1.0	3.4	1.8
01Jan2000	05:48	1.8	0.4	1.0	3.3	1.8
01Jan2000	05:49	1.8	0.4	1.0	3.2	1.8
01Jan2000	05:50	1.8	0.4	0.9	3.1	1.8
01Jan2000	05:51	1.8	0.4	0.9	3.0	1.8
01Jan2000	05:52	1.8	0.4	0.9	2.9	1.8
01Jan2000	05:53	1.7	0.4	0.9	2.8	1.7
01Jan2000	05:54	1.7	0.4	0.9	2.8	1.7
01Jan2000	05:55	1.7	0.4	0.9	2.7	1.7
01Jan2000	05:56	1.7	0.4	0.9	2.6	1.7
01Jan2000	05:57	1.7	0.4	0.9	2.6	1.7
01Jan2000	05:58	1.7	0.4	0.9	2.5	1.7
01Jan2000	05:59	1.7	0.4	0.9	2.4	1.7
01Jan2000	06:00	1.7	0.4	0.9	2.4	1.7
01Jan2000	06:01	1.6	0.4	0.9	2.3	1.6
01Jan2000	06:02	1.5	0.4	0.9	2.3	1.5
01Jan2000	06:03	1.4	0.4	0.9	2.2	1.4
01Jan2000	06:04	1.2	0.4	0.9	2.1	1.2
01Jan2000	06:05	1.1	0.4	0.9	2.0	1.1
01Jan2000	06:06	1.0	0.4	0.9	1.9	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.9	0.4	0.9	1.8	0.9
01Jan2000	06:08	0.8	0.4	0.9	1.7	0.8
01Jan2000	06:09	0.7	0.4	0.9	1.6	0.7
01Jan2000	06:10	0.6	0.4	0.9	1.5	0.6
01Jan2000	06:11	0.5	0.4	0.9	1.4	0.5
01Jan2000	06:12	0.3	0.4	0.9	1.2	0.3
01Jan2000	06:13	0.2	0.4	0.9	1.1	0.2
01Jan2000	06:14	0.1	0.4	0.9	0.9	0.1
01Jan2000	06:15	0.0	0.4	0.9	0.7	0.0

Node to Node		Code	C Factor	Area (ac.)	C x A
2564	2563	2	0.54	0.16	0.09
2563	2563.1	6	0.51	1.93	0.98
2563.1	2563.2	2	0.51	0.55	0.28
2563.2	2562	6	0.51	0.55	0.28
2561	2560	2	0.51	0.13	0.07
2560	2560.1	6	0.51	1.96	1.00
2560.1	2560.2	2	0.51	0.4	0.20
2560.2	2559	6	0.51	0.97	0.49
2557	2556	2	0.51	0.16	0.08
2556	2555	6	0.51	3.46	1.76
			Total	10.27	5.24
			Avg C =	0.51	

Mesa - Basin at Node 2552

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 2/6/2017

TIME OF CONCENTRATION 11 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 10.3 ACRES

RUNOFF COEFFICIENT 0.51

PEAK DISCHARGE 30.84 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 11 DISCHARGE (CFS) = 1.1

TIME (MIN) = 22 DISCHARGE (CFS) = 1.1

TIME (MIN) = 33 DISCHARGE (CFS) = 1.2

TIME (MIN) = 44 DISCHARGE (CFS) = 1.2

TIME (MIN) = 55 DISCHARGE (CFS) = 1.2

TIME (MIN) = 66 DISCHARGE (CFS) = 1.3

TIME (MIN) = 77 DISCHARGE (CFS) = 1.3

TIME (MIN) = 88 DISCHARGE (CFS) = 1.4

TIME (MIN) = 99 DISCHARGE (CFS) = 1.5

TIME (MIN) = 110 DISCHARGE (CFS) = 1.5

TIME (MIN) = 121 DISCHARGE (CFS) = 1.6

TIME (MIN) = 132 DISCHARGE (CFS) = 1.7

TIME (MIN) = 143 DISCHARGE (CFS) = 1.8

TIME (MIN) = 154 DISCHARGE (CFS) = 1.9

TIME (MIN) = 165 DISCHARGE (CFS) = 2.1

TIME (MIN) = 176 DISCHARGE (CFS) = 2.3

TIME (MIN) = 187 DISCHARGE (CFS) = 2.6
TIME (MIN) = 198 DISCHARGE (CFS) = 2.8
TIME (MIN) = 209 DISCHARGE (CFS) = 3.4
TIME (MIN) = 220 DISCHARGE (CFS) = 3.9
TIME (MIN) = 231 DISCHARGE (CFS) = 5.8
TIME (MIN) = 242 DISCHARGE (CFS) = 6.4
TIME (MIN) = 253 DISCHARGE (CFS) = 30.84
TIME (MIN) = 264 DISCHARGE (CFS) = 4.6
TIME (MIN) = 275 DISCHARGE (CFS) = 3.1
TIME (MIN) = 286 DISCHARGE (CFS) = 2.4
TIME (MIN) = 297 DISCHARGE (CFS) = 2
TIME (MIN) = 308 DISCHARGE (CFS) = 1.8
TIME (MIN) = 319 DISCHARGE (CFS) = 1.6
TIME (MIN) = 330 DISCHARGE (CFS) = 1.4
TIME (MIN) = 341 DISCHARGE (CFS) = 1.3
TIME (MIN) = 352 DISCHARGE (CFS) = 1.2
TIME (MIN) = 363 DISCHARGE (CFS) = 1.1
TIME (MIN) = 374 DISCHARGE (CFS) = 0

Detention Basin 2552 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 30.84 cfs

Time of Concentration= 11 minutes

HEC-HMS Time Interval Used= 1 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0.0		0.0
1		0.1	0.1
2		0.2	0.2
3		0.3	0.3
4		0.4	0.4
5		0.5	0.5
6		0.6	0.6
7		0.7	0.7
8		0.8	0.8
9		0.9	0.9
10		1.0	1.0
11	1.1		1.1
12		1.1	1.1
13		1.1	1.1
14		1.1	1.1
15		1.1	1.1
16		1.1	1.1
17		1.1	1.1
18		1.1	1.1
19		1.1	1.1
20		1.1	1.1
21		1.1	1.1
22	1.1		1.1
23		1.1	1.1
24		1.1	1.1
25		1.1	1.1
26		1.1	1.1
27		1.1	1.1
28		1.2	1.2
29		1.2	1.2
30		1.2	1.2
31		1.2	1.2
32		1.2	1.2
33	1.2		1.2
34		1.2	1.2
35		1.2	1.2
36		1.2	1.2
37		1.2	1.2
38		1.2	1.2

39		1.2	1.2	1.833333
40		1.2	1.2	1.571429
41		1.2	1.2	1.375
42		1.2	1.2	1.222222
43		1.2	1.2	1.1
44	1.2		1.2	
45		1.2	1.2	11
46		1.2	1.2	5.5
47		1.2	1.2	3.666667
48		1.2	1.2	2.75
49		1.2	1.2	2.2
50		1.2	1.2	1.833333
51		1.2	1.2	1.571429
52		1.2	1.2	1.375
53		1.2	1.2	1.222222
54		1.2	1.2	1.1
55	1.2		1.2	
56		1.2	1.2	11
57		1.2	1.2	5.5
58		1.2	1.2	3.666667
59		1.2	1.2	2.75
60		1.2	1.2	2.2
61		1.3	1.3	1.833333
62		1.3	1.3	1.571429
63		1.3	1.3	1.375
64		1.3	1.3	1.222222
65		1.3	1.3	1.1
66	1.3		1.3	
67		1.3	1.3	11
68		1.3	1.3	5.5
69		1.3	1.3	3.666667
70		1.3	1.3	2.75
71		1.3	1.3	2.2
72		1.3	1.3	1.833333
73		1.3	1.3	1.571429
74		1.3	1.3	1.375
75		1.3	1.3	1.222222
76		1.3	1.3	1.1
77	1.3		1.3	
78		1.3	1.3	11
79		1.3	1.3	5.5
80		1.3	1.3	3.666667
81		1.3	1.3	2.75
82		1.3	1.3	2.2
83		1.4	1.4	1.833333
84		1.4	1.4	1.571429
85		1.4	1.4	1.375
86		1.4	1.4	1.222222

87		1.4	1.4	1.1
88	1.4		1.4	
89		1.4	1.4	11
90		1.4	1.4	5.5
91		1.4	1.4	3.666667
92		1.4	1.4	2.75
93		1.4	1.4	2.2
94		1.5	1.5	1.833333
95		1.5	1.5	1.571429
96		1.5	1.5	1.375
97		1.5	1.5	1.222222
98		1.5	1.5	1.1
99	1.5		1.5	
100		1.5	1.5	11
101		1.5	1.5	5.5
102		1.5	1.5	3.666667
103		1.5	1.5	2.75
104		1.5	1.5	2.2
105		1.5	1.5	1.833333
106		1.5	1.5	1.571429
107		1.5	1.5	1.375
108		1.5	1.5	1.222222
109		1.5	1.5	1.1
110	1.5		1.5	
111		1.5	1.5	11
112		1.5	1.5	5.5
113		1.5	1.5	3.666667
114		1.5	1.5	2.75
115		1.5	1.5	2.2
116		1.6	1.6	1.833333
117		1.6	1.6	1.571429
118		1.6	1.6	1.375
119		1.6	1.6	1.222222
120		1.6	1.6	1.1
121	1.6		1.6	
122		1.6	1.6	11
123		1.6	1.6	5.5
124		1.6	1.6	3.666667
125		1.6	1.6	2.75
126		1.6	1.6	2.2
127		1.7	1.7	1.833333
128		1.7	1.7	1.571429
129		1.7	1.7	1.375
130		1.7	1.7	1.222222
131		1.7	1.7	1.1
132	1.7		1.7	
133		1.7	1.7	11
134		1.7	1.7	5.5

135		1.7	1.7	3.666667
136		1.7	1.7	2.75
137		1.7	1.7	2.2
138		1.8	1.8	1.833333
139		1.8	1.8	1.571429
140		1.8	1.8	1.375
141		1.8	1.8	1.222222
142		1.8	1.8	1.1
143	1.8		1.8	
144		1.8	1.8	11
145		1.8	1.8	5.5
146		1.8	1.8	3.666667
147		1.8	1.8	2.75
148		1.8	1.8	2.2
149		1.9	1.9	1.833333
150		1.9	1.9	1.571429
151		1.9	1.9	1.375
152		1.9	1.9	1.222222
153		1.9	1.9	1.1
154	1.9		1.9	
155		1.9	1.9	11
156		1.9	1.9	5.5
157		2.0	2.0	3.666667
158		2.0	2.0	2.75
159		2.0	2.0	2.2
160		2.0	2.0	1.833333
161		2.0	2.0	1.571429
162		2.0	2.0	1.375
163		2.1	2.1	1.222222
164		2.1	2.1	1.1
165	2.1		2.1	
166		2.1	2.1	11
167		2.1	2.1	5.5
168		2.2	2.2	3.666667
169		2.2	2.2	2.75
170		2.2	2.2	2.2
171		2.2	2.2	1.833333
172		2.2	2.2	1.571429
173		2.2	2.2	1.375
174		2.3	2.3	1.222222
175		2.3	2.3	1.1
176	2.3		2.3	
177		2.3	2.3	11
178		2.4	2.4	5.5
179		2.4	2.4	3.666667
180		2.4	2.4	2.75
181		2.4	2.4	2.2
182		2.5	2.5	1.833333

183		2.5	2.5	1.571429
184		2.5	2.5	1.375
185		2.5	2.5	1.222222
186		2.6	2.6	1.1
187	2.6		2.6	
188		2.6	2.6	11
189		2.6	2.6	5.5
190		2.7	2.7	3.666667
191		2.7	2.7	2.75
192		2.7	2.7	2.2
193		2.7	2.7	1.833333
194		2.7	2.7	1.571429
195		2.7	2.7	1.375
196		2.8	2.8	1.222222
197		2.8	2.8	1.1
198	2.8		2.8	
199		2.9	2.9	11
200		2.9	2.9	5.5
201		3.0	3.0	3.666667
202		3.0	3.0	2.75
203		3.1	3.1	2.2
204		3.1	3.1	1.833333
205		3.2	3.2	1.571429
206		3.2	3.2	1.375
207		3.3	3.3	1.222222
208		3.3	3.3	1.1
209	3.4		3.4	
210		3.4	3.4	11
211		3.5	3.5	5.5
212		3.5	3.5	3.666667
213		3.6	3.6	2.75
214		3.6	3.6	2.2
215		3.7	3.7	1.833333
216		3.7	3.7	1.571429
217		3.8	3.8	1.375
218		3.8	3.8	1.222222
219		3.9	3.9	1.1
220	3.9		3.9	
221		4.1	4.1	11
222		4.2	4.2	5.5
223		4.4	4.4	3.666667
224		4.6	4.6	2.75
225		4.8	4.8	2.2
226		4.9	4.9	1.833333
227		5.1	5.1	1.571429
228		5.3	5.3	1.375
229		5.5	5.5	1.222222
230		5.6	5.6	1.1

231	5.8		5.8	
232		5.9	5.9	11
233		5.9	5.9	5.5
234		6.0	6.0	3.666667
235		6.0	6.0	2.75
236		6.1	6.1	2.2
237		6.1	6.1	1.833333
238		6.2	6.2	1.571429
239		6.2	6.2	1.375
240		6.3	6.3	1.222222
241		6.3	6.3	1.1
242	6.4		6.4	
243		8.6	8.6	11
244		10.8	10.8	5.5
245		13.1	13.1	3.666667
246		15.3	15.3	2.75
247		17.5	17.5	2.2
248		19.7	19.7	1.833333
249		22.0	22.0	1.571429
250		24.2	24.2	1.375
251		26.4	26.4	1.222222
252		28.6	28.6	1.1
253	30.8		30.8	
254		28.5	28.5	11
255		26.1	26.1	5.5
256		23.7	23.7	3.666667
257		21.3	21.3	2.75
258		18.9	18.9	2.2
259		16.5	16.5	1.833333
260		14.1	14.1	1.571429
261		11.8	11.8	1.375
262		9.4	9.4	1.222222
263		7.0	7.0	1.1
264	4.6		4.6	
265		4.5	4.5	11
266		4.3	4.3	5.5
267		4.2	4.2	3.666667
268		4.1	4.1	2.75
269		3.9	3.9	2.2
270		3.8	3.8	1.833333
271		3.6	3.6	1.571429
272		3.5	3.5	1.375
273		3.4	3.4	1.222222
274		3.2	3.2	1.1
275	3.1		3.1	
276		3.0	3.0	11
277		3.0	3.0	5.5
278		2.9	2.9	3.666667

279		2.8	2.8	2.75
280		2.8	2.8	2.2
281		2.7	2.7	1.833333
282		2.7	2.7	1.571429
283		2.6	2.6	1.375
284		2.5	2.5	1.222222
285		2.5	2.5	1.1
286	2.4		2.4	
287		2.4	2.4	11
288		2.3	2.3	5.5
289		2.3	2.3	3.666667
290		2.3	2.3	2.75
291		2.2	2.2	2.2
292		2.2	2.2	1.833333
293		2.1	2.1	1.571429
294		2.1	2.1	1.375
295		2.1	2.1	1.222222
296		2.0	2.0	1.1
297	2.0		2.0	
298		2.0	2.0	11
299		2.0	2.0	5.5
300		1.9	1.9	3.666667
301		1.9	1.9	2.75
302		1.9	1.9	2.2
303		1.9	1.9	1.833333
304		1.9	1.9	1.571429
305		1.9	1.9	1.375
306		1.8	1.8	1.222222
307		1.8	1.8	1.1
308	1.8		1.8	
309		1.8	1.8	11
310		1.8	1.8	5.5
311		1.7	1.7	3.666667
312		1.7	1.7	2.75
313		1.7	1.7	2.2
314		1.7	1.7	1.833333
315		1.7	1.7	1.571429
316		1.7	1.7	1.375
317		1.6	1.6	1.222222
318		1.6	1.6	1.1
319	1.6		1.6	
320		1.6	1.6	11
321		1.6	1.6	5.5
322		1.5	1.5	3.666667
323		1.5	1.5	2.75
324		1.5	1.5	2.2
325		1.5	1.5	1.833333
326		1.5	1.5	1.571429

327		1.5	1.5	1.375
328		1.4	1.4	1.222222
329		1.4	1.4	1.1
330	1.4		1.4	
331		1.4	1.4	11
332		1.4	1.4	5.5
333		1.4	1.4	3.666667
334		1.4	1.4	2.75
335		1.4	1.4	2.2
336		1.3	1.3	1.833333
337		1.3	1.3	1.571429
338		1.3	1.3	1.375
339		1.3	1.3	1.222222
340		1.3	1.3	1.1
341	1.3		1.3	
342		1.3	1.3	11
343		1.3	1.3	5.5
344		1.3	1.3	3.666667
345		1.3	1.3	2.75
346		1.3	1.3	2.2
347		1.2	1.2	1.833333
348		1.2	1.2	1.571429
349		1.2	1.2	1.375
350		1.2	1.2	1.222222
351		1.2	1.2	1.1
352	1.2		1.2	
353		1.2	1.2	11
354		1.2	1.2	5.5
355		1.2	1.2	3.666667
356		1.2	1.2	2.75
357		1.2	1.2	2.2
358		1.1	1.1	1.833333
359		1.1	1.1	1.571429
360		1.1	1.1	1.375
361		1.1	1.1	1.222222
362		1.1	1.1	1.1
363	1.1		1.1	
364		1.0	1.0	11
365		0.9	0.9	5.5
366		0.8	0.8	3.666667
367		0.7	0.7	2.75
368		0.6	0.6	2.2
369		0.5	0.5	1.833333
370		0.4	0.4	1.571429
371		0.3	0.3	1.375
372		0.2	0.2	1.222222
373		0.1	0.1	1.1
374	0.0		0.0	

Detention 2552 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are tabs for 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a sub-tab for 'Source'. The 'Basin Inflow' element is selected, and its configuration is displayed in the bottom section.

Basin Name: Basin 2552
Element Name: Basin Inflow

Description: Node 2552
Downstream: Detention Basin 2552
Area (MI²): 0.016
Flow Method: Discharge Gage

Detention 2552

Basin Models

Basin 2552

Basin Inflow

Discharge Gage

Detention Basin 2552

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2552 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:14

Paired Data

Elevation-Storage Functions

Basin 2552 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	1.541

Project: Detention 2552 Simulation Run: Run 1
Reservoir: Detention Basin 2552

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 2552
End of Run:	01Jan2000, 06:14	Meteorologic Model:	Sierra
Compute Time:	07Feb2017, 08:19:24	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	30.8 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:13
Peak Discharge:	9.1 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:22
Inflow Volume:	1.5 (AC-FT)	Peak Storage:	0.7 (AC-FT)
Discharge Volume:	1.2 (AC-FT)	Peak Elevation:	1.9 (FT)

Observed Hydrograph at Gage Node 2552 Inflow

Peak Discharge:	30.8 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:13
Mean Abs Error:	2.3 (CFS)	RMS Error:	3.8 (CFS)
Volume:	1.5 (AC-FT)	Volume Residual:	-0.3 (AC-FT)
Nash-Sutcliffe:	0.231		

Project: Detention 2552 Simulation Run: Run 1
Reservoir: Detention Basin 2552

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 2552
End of Run: 01Jan2000, 06:14 Meteorologic Model: Sierra
Compute Time: 07Feb2017, 08:19:24 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:02	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:03	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:04	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:05	0.5	0.0	0.0	0.0	0.5
01Jan2000	00:06	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:07	0.7	0.0	0.0	0.0	0.7
01Jan2000	00:08	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:09	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:10	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:11	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:12	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:13	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:14	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:15	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:16	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:17	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:18	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:19	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:20	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:21	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:22	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:23	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:24	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:25	1.1	0.0	0.1	0.0	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:27	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:28	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:29	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:30	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:31	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:32	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:33	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:34	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:35	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:36	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:37	1.2	0.0	0.1	0.0	1.2
01Jan2000	00:38	1.2	0.1	0.1	0.0	1.2
01Jan2000	00:39	1.2	0.1	0.1	0.0	1.2
01Jan2000	00:40	1.2	0.1	0.1	0.0	1.2
01Jan2000	00:41	1.2	0.1	0.1	0.0	1.2
01Jan2000	00:42	1.2	0.1	0.1	0.0	1.2
01Jan2000	00:43	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:44	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:45	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:46	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:47	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:48	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:49	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:50	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:51	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:52	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:53	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:54	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:55	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:56	1.2	0.1	0.2	0.0	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:58	1.2	0.1	0.2	0.0	1.2
01Jan2000	00:59	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:00	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:01	1.3	0.1	0.2	0.0	1.3
01Jan2000	01:02	1.3	0.1	0.2	0.0	1.3
01Jan2000	01:03	1.3	0.1	0.2	0.0	1.3
01Jan2000	01:04	1.3	0.1	0.2	0.0	1.3
01Jan2000	01:05	1.3	0.1	0.2	0.0	1.3
01Jan2000	01:06	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:07	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:08	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:09	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:10	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:11	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:12	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:13	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:14	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:15	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:16	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:17	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:18	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:19	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:20	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:21	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:22	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:23	1.4	0.1	0.3	0.0	1.4
01Jan2000	01:24	1.4	0.1	0.3	0.0	1.4
01Jan2000	01:25	1.4	0.1	0.3	0.0	1.4
01Jan2000	01:26	1.4	0.1	0.3	0.0	1.4
01Jan2000	01:27	1.4	0.1	0.4	0.0	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:29	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:30	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:31	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:32	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:33	1.4	0.1	0.4	0.0	1.4
01Jan2000	01:34	1.5	0.1	0.4	0.0	1.5
01Jan2000	01:35	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:36	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:37	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:38	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:39	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:40	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:41	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:42	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:43	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:44	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:45	1.5	0.2	0.4	0.0	1.5
01Jan2000	01:46	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:47	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:48	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:49	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:50	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:51	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:52	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:53	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:54	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:55	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:56	1.6	0.2	0.5	0.0	1.6
01Jan2000	01:57	1.6	0.2	0.5	0.0	1.6
01Jan2000	01:58	1.6	0.2	0.5	0.0	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:00	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:01	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:02	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:03	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:04	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:05	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:06	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:07	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:08	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:09	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:10	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:11	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:12	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:13	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:14	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:15	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:16	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:17	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:18	1.8	0.2	0.6	0.0	1.8
01Jan2000	02:19	1.8	0.2	0.6	0.0	1.8
01Jan2000	02:20	1.8	0.3	0.6	0.0	1.8
01Jan2000	02:21	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:22	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:23	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:24	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:25	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:26	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:27	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:28	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:29	1.9	0.3	0.7	0.0	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:31	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:32	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:33	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:34	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:35	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:36	1.9	0.3	0.8	0.5	1.9
01Jan2000	02:37	2.0	0.3	0.8	0.8	2.0
01Jan2000	02:38	2.0	0.3	0.8	1.0	2.0
01Jan2000	02:39	2.0	0.3	0.8	1.1	2.0
01Jan2000	02:40	2.0	0.3	0.8	1.2	2.0
01Jan2000	02:41	2.0	0.3	0.8	1.3	2.0
01Jan2000	02:42	2.0	0.3	0.8	1.3	2.0
01Jan2000	02:43	2.1	0.3	0.8	1.4	2.1
01Jan2000	02:44	2.1	0.3	0.8	1.5	2.1
01Jan2000	02:45	2.1	0.3	0.8	1.5	2.1
01Jan2000	02:46	2.1	0.3	0.8	1.6	2.1
01Jan2000	02:47	2.1	0.3	0.8	1.6	2.1
01Jan2000	02:48	2.2	0.3	0.8	1.6	2.2
01Jan2000	02:49	2.2	0.3	0.8	1.7	2.2
01Jan2000	02:50	2.2	0.3	0.8	1.7	2.2
01Jan2000	02:51	2.2	0.3	0.8	1.8	2.2
01Jan2000	02:52	2.2	0.3	0.8	1.8	2.2
01Jan2000	02:53	2.2	0.3	0.8	1.8	2.2
01Jan2000	02:54	2.3	0.3	0.8	1.8	2.3
01Jan2000	02:55	2.3	0.3	0.8	1.9	2.3
01Jan2000	02:56	2.3	0.3	0.8	1.9	2.3
01Jan2000	02:57	2.3	0.3	0.8	1.9	2.3
01Jan2000	02:58	2.4	0.3	0.8	2.0	2.4
01Jan2000	02:59	2.4	0.3	0.8	2.0	2.4
01Jan2000	03:00	2.4	0.3	0.8	2.0	2.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	2.4	0.3	0.8	2.0	2.4
01Jan2000	03:02	2.5	0.3	0.8	2.1	2.5
01Jan2000	03:03	2.5	0.3	0.8	2.1	2.5
01Jan2000	03:04	2.5	0.3	0.8	2.1	2.5
01Jan2000	03:05	2.5	0.3	0.8	2.1	2.5
01Jan2000	03:06	2.6	0.3	0.8	2.2	2.6
01Jan2000	03:07	2.6	0.3	0.8	2.2	2.6
01Jan2000	03:08	2.6	0.3	0.8	2.2	2.6
01Jan2000	03:09	2.6	0.3	0.8	2.2	2.6
01Jan2000	03:10	2.7	0.3	0.8	2.3	2.7
01Jan2000	03:11	2.7	0.3	0.8	2.3	2.7
01Jan2000	03:12	2.7	0.3	0.8	2.3	2.7
01Jan2000	03:13	2.7	0.3	0.8	2.3	2.7
01Jan2000	03:14	2.7	0.3	0.8	2.3	2.7
01Jan2000	03:15	2.7	0.3	0.8	2.4	2.7
01Jan2000	03:16	2.8	0.3	0.8	2.4	2.8
01Jan2000	03:17	2.8	0.3	0.8	2.4	2.8
01Jan2000	03:18	2.8	0.3	0.8	2.4	2.8
01Jan2000	03:19	2.9	0.3	0.8	2.4	2.9
01Jan2000	03:20	2.9	0.3	0.8	2.5	2.9
01Jan2000	03:21	3.0	0.3	0.8	2.5	3.0
01Jan2000	03:22	3.0	0.3	0.8	2.5	3.0
01Jan2000	03:23	3.1	0.3	0.8	2.5	3.1
01Jan2000	03:24	3.1	0.3	0.8	2.6	3.1
01Jan2000	03:25	3.2	0.3	0.8	2.6	3.2
01Jan2000	03:26	3.2	0.3	0.8	2.6	3.2
01Jan2000	03:27	3.3	0.3	0.8	2.7	3.3
01Jan2000	03:28	3.3	0.3	0.9	2.7	3.3
01Jan2000	03:29	3.4	0.3	0.9	2.7	3.4
01Jan2000	03:30	3.4	0.3	0.9	2.8	3.4
01Jan2000	03:31	3.5	0.3	0.9	2.8	3.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	3.5	0.3	0.9	2.8	3.5
01Jan2000	03:33	3.6	0.3	0.9	2.8	3.6
01Jan2000	03:34	3.6	0.3	0.9	2.9	3.6
01Jan2000	03:35	3.7	0.3	0.9	2.9	3.7
01Jan2000	03:36	3.7	0.3	0.9	3.0	3.7
01Jan2000	03:37	3.8	0.3	0.9	3.0	3.8
01Jan2000	03:38	3.8	0.3	0.9	3.0	3.8
01Jan2000	03:39	3.9	0.3	0.9	3.1	3.9
01Jan2000	03:40	3.9	0.3	0.9	3.1	3.9
01Jan2000	03:41	4.1	0.3	0.9	3.1	4.1
01Jan2000	03:42	4.2	0.3	0.9	3.2	4.2
01Jan2000	03:43	4.4	0.3	0.9	3.2	4.4
01Jan2000	03:44	4.6	0.3	0.9	3.3	4.6
01Jan2000	03:45	4.8	0.3	0.9	3.3	4.8
01Jan2000	03:46	4.9	0.3	0.9	3.4	4.9
01Jan2000	03:47	5.1	0.4	0.9	3.4	5.1
01Jan2000	03:48	5.3	0.4	0.9	3.5	5.3
01Jan2000	03:49	5.5	0.4	0.9	3.6	5.5
01Jan2000	03:50	5.6	0.4	0.9	3.6	5.6
01Jan2000	03:51	5.8	0.4	0.9	3.7	5.8
01Jan2000	03:52	5.9	0.4	0.9	3.8	5.9
01Jan2000	03:53	5.9	0.4	1.0	3.9	5.9
01Jan2000	03:54	6.0	0.4	1.0	3.9	6.0
01Jan2000	03:55	6.0	0.4	1.0	4.0	6.0
01Jan2000	03:56	6.1	0.4	1.0	4.1	6.1
01Jan2000	03:57	6.1	0.4	1.0	4.1	6.1
01Jan2000	03:58	6.2	0.4	1.0	4.2	6.2
01Jan2000	03:59	6.2	0.4	1.0	4.2	6.2
01Jan2000	04:00	6.3	0.4	1.0	4.3	6.3
01Jan2000	04:01	6.3	0.4	1.0	4.4	6.3
01Jan2000	04:02	6.4	0.4	1.0	4.4	6.4

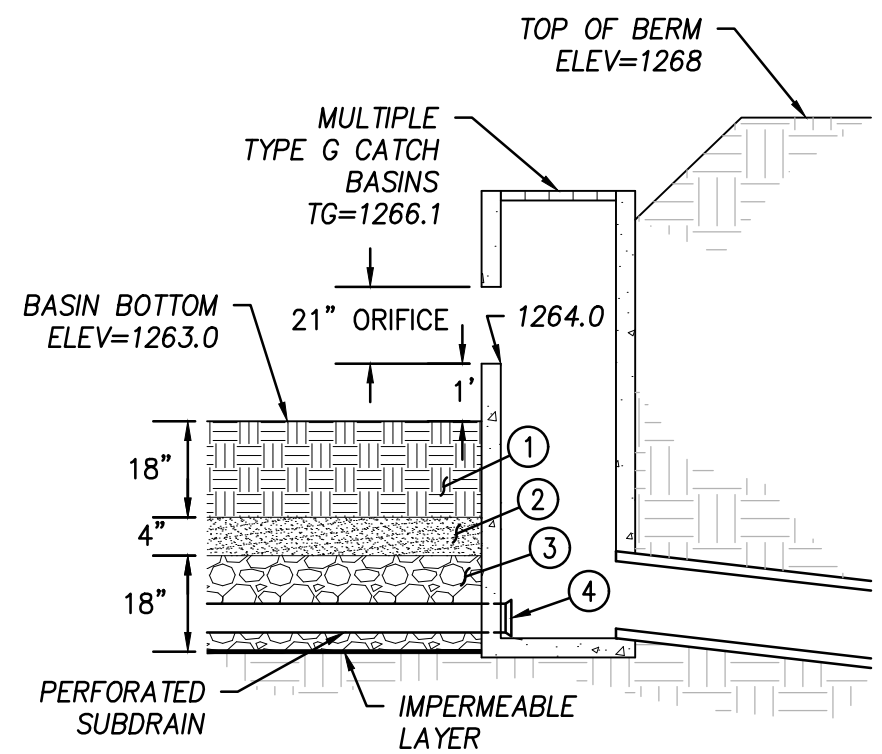
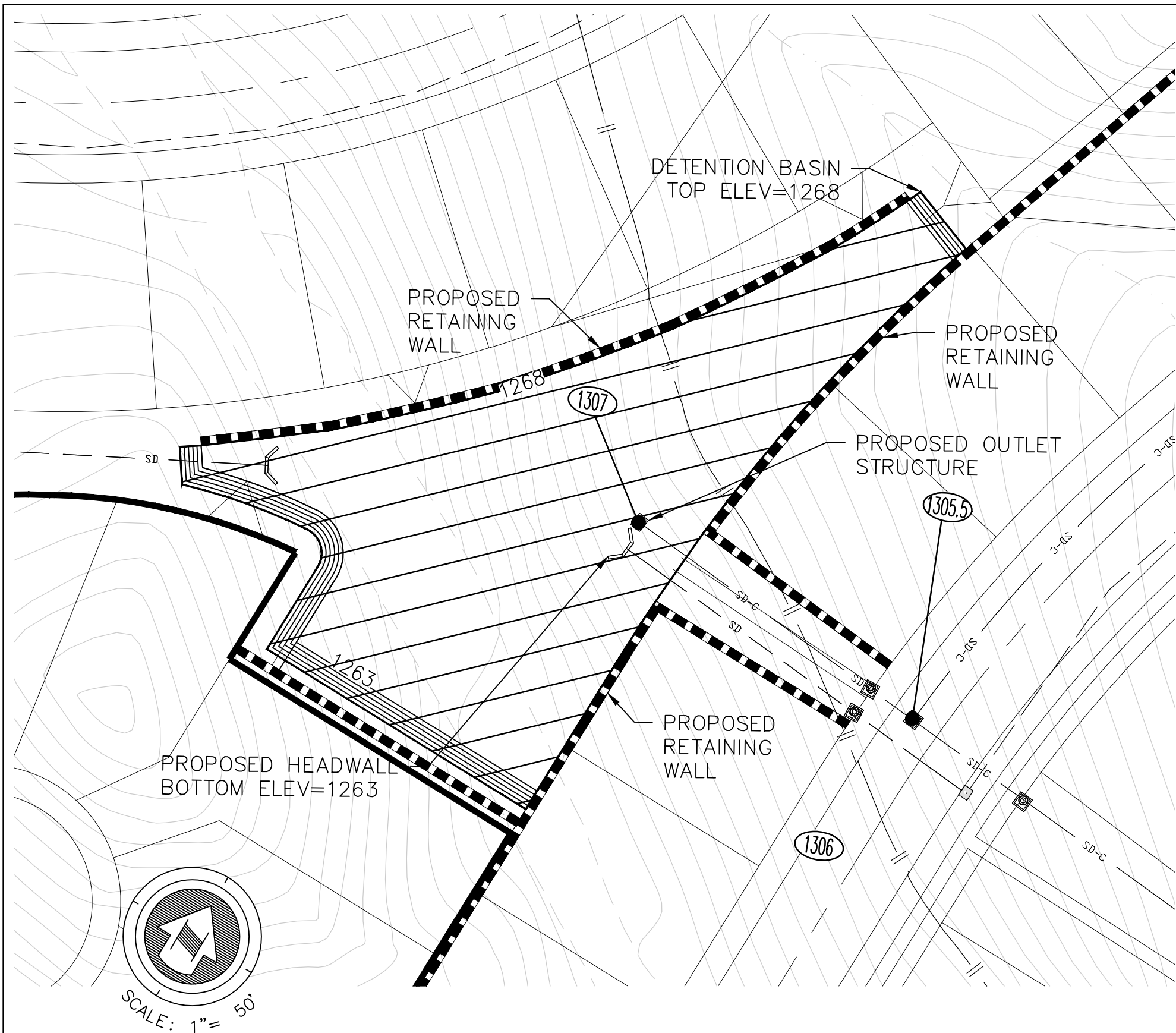
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	8.6	0.4	1.0	4.5	8.6
01Jan2000	04:04	10.8	0.4	1.0	4.7	10.8
01Jan2000	04:05	13.1	0.4	1.1	4.8	13.1
01Jan2000	04:06	15.3	0.4	1.1	5.1	15.3
01Jan2000	04:07	17.5	0.4	1.1	5.4	17.5
01Jan2000	04:08	19.7	0.5	1.2	5.7	19.7
01Jan2000	04:09	22.0	0.5	1.2	6.0	22.0
01Jan2000	04:10	24.2	0.5	1.3	6.4	24.2
01Jan2000	04:11	26.4	0.5	1.4	6.7	26.4
01Jan2000	04:12	28.6	0.6	1.4	7.1	28.6
01Jan2000	04:13	30.8	0.6	1.5	7.5	30.8
01Jan2000	04:14	28.5	0.6	1.6	7.9	28.5
01Jan2000	04:15	26.1	0.6	1.7	8.2	26.1
01Jan2000	04:16	23.7	0.7	1.7	8.4	23.7
01Jan2000	04:17	21.3	0.7	1.8	8.7	21.3
01Jan2000	04:18	18.9	0.7	1.8	8.8	18.9
01Jan2000	04:19	16.5	0.7	1.9	9.0	16.5
01Jan2000	04:20	14.1	0.7	1.9	9.0	14.1
01Jan2000	04:21	11.8	0.7	1.9	9.1	11.8
01Jan2000	04:22	9.4	0.7	1.9	9.1	9.4
01Jan2000	04:23	7.0	0.7	1.9	9.1	7.0
01Jan2000	04:24	4.6	0.7	1.9	9.1	4.6
01Jan2000	04:25	4.5	0.7	1.9	9.0	4.5
01Jan2000	04:26	4.3	0.7	1.9	8.9	4.3
01Jan2000	04:27	4.2	0.7	1.8	8.9	4.2
01Jan2000	04:28	4.1	0.7	1.8	8.8	4.1
01Jan2000	04:29	3.9	0.7	1.8	8.7	3.9
01Jan2000	04:30	3.8	0.7	1.8	8.7	3.8
01Jan2000	04:31	3.6	0.7	1.8	8.6	3.6
01Jan2000	04:32	3.5	0.7	1.7	8.5	3.5
01Jan2000	04:33	3.4	0.7	1.7	8.4	3.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	3.2	0.7	1.7	8.3	3.2
01Jan2000	04:35	3.1	0.7	1.7	8.3	3.1
01Jan2000	04:36	3.0	0.6	1.7	8.2	3.0
01Jan2000	04:37	3.0	0.6	1.7	8.1	3.0
01Jan2000	04:38	2.9	0.6	1.6	8.0	2.9
01Jan2000	04:39	2.8	0.6	1.6	7.9	2.8
01Jan2000	04:40	2.8	0.6	1.6	7.9	2.8
01Jan2000	04:41	2.7	0.6	1.6	7.8	2.7
01Jan2000	04:42	2.7	0.6	1.6	7.7	2.7
01Jan2000	04:43	2.6	0.6	1.5	7.6	2.6
01Jan2000	04:44	2.5	0.6	1.5	7.5	2.5
01Jan2000	04:45	2.5	0.6	1.5	7.4	2.5
01Jan2000	04:46	2.4	0.6	1.5	7.3	2.4
01Jan2000	04:47	2.4	0.6	1.5	7.3	2.4
01Jan2000	04:48	2.3	0.6	1.5	7.2	2.3
01Jan2000	04:49	2.3	0.6	1.4	7.1	2.3
01Jan2000	04:50	2.3	0.5	1.4	7.0	2.3
01Jan2000	04:51	2.2	0.5	1.4	6.9	2.2
01Jan2000	04:52	2.2	0.5	1.4	6.8	2.2
01Jan2000	04:53	2.1	0.5	1.4	6.7	2.1
01Jan2000	04:54	2.1	0.5	1.4	6.6	2.1
01Jan2000	04:55	2.1	0.5	1.3	6.6	2.1
01Jan2000	04:56	2.0	0.5	1.3	6.5	2.0
01Jan2000	04:57	2.0	0.5	1.3	6.4	2.0
01Jan2000	04:58	2.0	0.5	1.3	6.3	2.0
01Jan2000	04:59	2.0	0.5	1.3	6.2	2.0
01Jan2000	05:00	1.9	0.5	1.3	6.1	1.9
01Jan2000	05:01	1.9	0.5	1.3	6.0	1.9
01Jan2000	05:02	1.9	0.5	1.2	5.9	1.9
01Jan2000	05:03	1.9	0.5	1.2	5.8	1.9
01Jan2000	05:04	1.9	0.5	1.2	5.8	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	1.9	0.5	1.2	5.7	1.9
01Jan2000	05:06	1.8	0.5	1.2	5.6	1.8
01Jan2000	05:07	1.8	0.5	1.2	5.5	1.8
01Jan2000	05:08	1.8	0.4	1.2	5.4	1.8
01Jan2000	05:09	1.8	0.4	1.1	5.3	1.8
01Jan2000	05:10	1.8	0.4	1.1	5.2	1.8
01Jan2000	05:11	1.7	0.4	1.1	5.2	1.7
01Jan2000	05:12	1.7	0.4	1.1	5.1	1.7
01Jan2000	05:13	1.7	0.4	1.1	5.0	1.7
01Jan2000	05:14	1.7	0.4	1.1	4.9	1.7
01Jan2000	05:15	1.7	0.4	1.1	4.8	1.7
01Jan2000	05:16	1.7	0.4	1.1	4.7	1.7
01Jan2000	05:17	1.6	0.4	1.0	4.6	1.6
01Jan2000	05:18	1.6	0.4	1.0	4.6	1.6
01Jan2000	05:19	1.6	0.4	1.0	4.5	1.6
01Jan2000	05:20	1.6	0.4	1.0	4.4	1.6
01Jan2000	05:21	1.6	0.4	1.0	4.3	1.6
01Jan2000	05:22	1.5	0.4	1.0	4.2	1.5
01Jan2000	05:23	1.5	0.4	1.0	4.2	1.5
01Jan2000	05:24	1.5	0.4	1.0	4.1	1.5
01Jan2000	05:25	1.5	0.4	1.0	4.0	1.5
01Jan2000	05:26	1.5	0.4	1.0	3.9	1.5
01Jan2000	05:27	1.5	0.4	1.0	3.8	1.5
01Jan2000	05:28	1.4	0.4	0.9	3.7	1.4
01Jan2000	05:29	1.4	0.4	0.9	3.7	1.4
01Jan2000	05:30	1.4	0.4	0.9	3.6	1.4
01Jan2000	05:31	1.4	0.4	0.9	3.5	1.4
01Jan2000	05:32	1.4	0.4	0.9	3.4	1.4
01Jan2000	05:33	1.4	0.3	0.9	3.4	1.4
01Jan2000	05:34	1.4	0.3	0.9	3.3	1.4
01Jan2000	05:35	1.4	0.3	0.9	3.2	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	1.3	0.3	0.9	3.1	1.3
01Jan2000	05:37	1.3	0.3	0.9	3.1	1.3
01Jan2000	05:38	1.3	0.3	0.9	3.0	1.3
01Jan2000	05:39	1.3	0.3	0.9	2.9	1.3
01Jan2000	05:40	1.3	0.3	0.9	2.8	1.3
01Jan2000	05:41	1.3	0.3	0.9	2.8	1.3
01Jan2000	05:42	1.3	0.3	0.9	2.7	1.3
01Jan2000	05:43	1.3	0.3	0.8	2.6	1.3
01Jan2000	05:44	1.3	0.3	0.8	2.6	1.3
01Jan2000	05:45	1.3	0.3	0.8	2.5	1.3
01Jan2000	05:46	1.3	0.3	0.8	2.4	1.3
01Jan2000	05:47	1.2	0.3	0.8	2.4	1.2
01Jan2000	05:48	1.2	0.3	0.8	2.3	1.2
01Jan2000	05:49	1.2	0.3	0.8	2.3	1.2
01Jan2000	05:50	1.2	0.3	0.8	2.2	1.2
01Jan2000	05:51	1.2	0.3	0.8	2.1	1.2
01Jan2000	05:52	1.2	0.3	0.8	2.1	1.2
01Jan2000	05:53	1.2	0.3	0.8	2.0	1.2
01Jan2000	05:54	1.2	0.3	0.8	2.0	1.2
01Jan2000	05:55	1.2	0.3	0.8	1.9	1.2
01Jan2000	05:56	1.2	0.3	0.8	1.9	1.2
01Jan2000	05:57	1.2	0.3	0.8	1.8	1.2
01Jan2000	05:58	1.1	0.3	0.8	1.8	1.1
01Jan2000	05:59	1.1	0.3	0.8	1.7	1.1
01Jan2000	06:00	1.1	0.3	0.8	1.7	1.1
01Jan2000	06:01	1.1	0.3	0.8	1.7	1.1
01Jan2000	06:02	1.1	0.3	0.8	1.6	1.1
01Jan2000	06:03	1.1	0.3	0.8	1.6	1.1
01Jan2000	06:04	1.0	0.3	0.8	1.5	1.0
01Jan2000	06:05	0.9	0.3	0.8	1.5	0.9
01Jan2000	06:06	0.8	0.3	0.8	1.4	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.7	0.3	0.8	1.4	0.7
01Jan2000	06:08	0.6	0.3	0.8	1.3	0.6
01Jan2000	06:09	0.5	0.3	0.8	1.2	0.5
01Jan2000	06:10	0.4	0.3	0.8	1.1	0.4
01Jan2000	06:11	0.3	0.3	0.8	1.1	0.3
01Jan2000	06:12	0.2	0.3	0.8	1.0	0.2
01Jan2000	06:13	0.1	0.3	0.8	0.9	0.1
01Jan2000	06:14	0.0	0.3	0.8	0.7	0.0

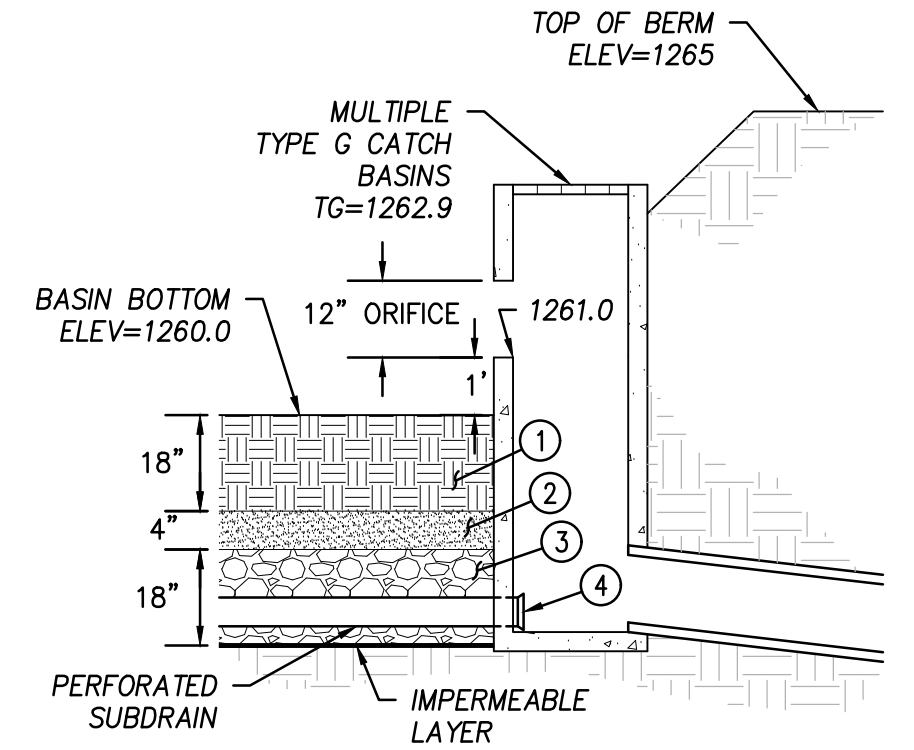
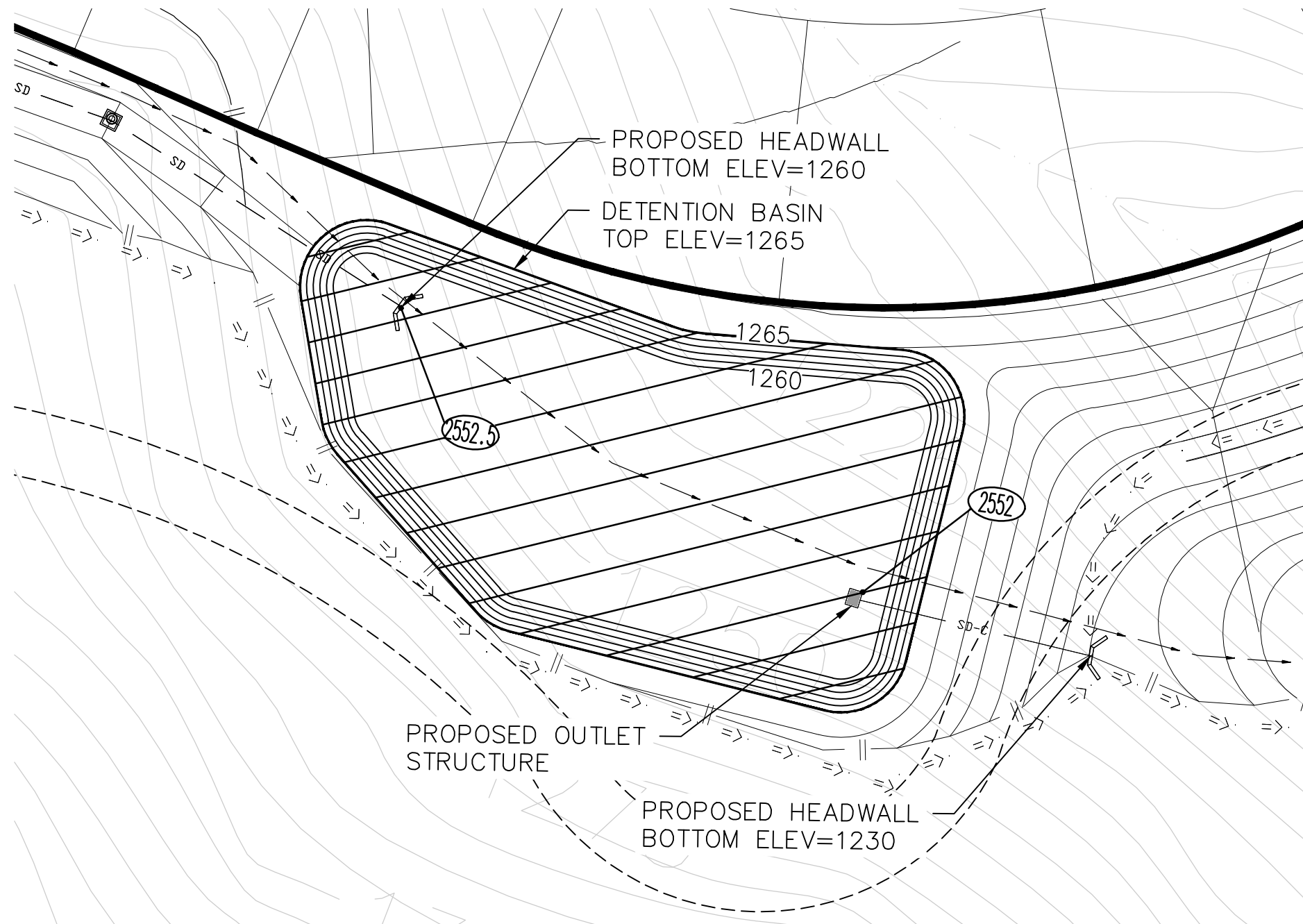


CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE NOT TO SCALE

BASIN A - PROPOSED DETENTION 1307 (BMP M2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1264	0	19700	0.45	0.000
1268	4	21100	0.48	1.873

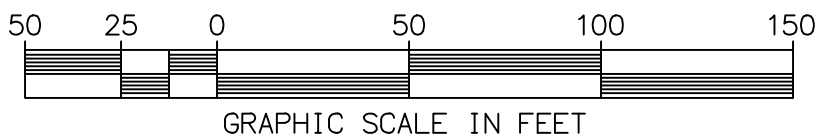


CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN A - PROPOSED DETENTION 2552 (BMP M8)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1261	0	14648	0.34	0.000
1265	4	18924	0.43	1.541



NEWLAND SIERRA **BASIN A - PROPOSED DETENTION BASINS** **DETENTION 2552 (BMP M8)**

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 16

Run Name:
P-16.dat

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2014 Advanced Engineering Software (aes)
 Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
 6390 Greenwich Drive, Suite 170
 San Diego, CA
 92122

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * *
 * *

FILE NAME: P-16.DAT
 TIME/DATE OF STUDY: 14:23 09/08/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 3.500
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES: WIDTH LIP HIKE	MANNING FACTOR
	(FT)	(FT)	(FT)	(FT)	(FT)	(n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

P-16.TXT

FLOW PROCESS FROM NODE 1607.00 TO NODE 1606.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 67.00

UPSTREAM ELEVATION(FEET) = 1344.00

DOWNSTREAM ELEVATION(FEET) = 1343.20

ELEVATION DIFFERENCE(FEET) = 0.80

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.055

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.89

TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.89

FLOW PROCESS FROM NODE 1606.00 TO NODE 1605.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1343.20 DOWNSTREAM ELEVATION(FEET) = 1310.00

STREET LENGTH(FEET) = 625.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.67

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31

HALFSTREET FLOOD WIDTH(FEET) = 9.10

AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.93

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.52

STREET FLOW TRAVEL TIME(MIN.) = 2.11 Tc(MIN.) = 5.17

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.028

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.880


```

                                P-16.TXT
SUBAREA AREA(ACRES) =      0.95      SUBAREA RUNOFF(CFS) =      7.55
TOTAL AREA(ACRES) =      1.1        PEAK FLOW RATE(CFS) =      8.42

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36    HALFSTREET FLOOD WIDTH(FEET) = 11.72
FLOW VELOCITY(FEET/SEC.) = 5.65    DEPTH*VELOCITY(FT*FT/SEC.) = 2.04
LONGEST FLOWPATH FROM NODE 1607.00 TO NODE 1605.00 = 692.00 FEET.

*****
FLOW PROCESS FROM NODE 1605.00 TO NODE 1604.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1306.00 DOWNSTREAM(FEET) = 1305.00
FLOW LENGTH(FEET) = 55.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.02
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.42
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 5.28
LONGEST FLOWPATH FROM NODE 1607.00 TO NODE 1604.00 = 747.00 FEET.

*****
FLOW PROCESS FROM NODE 1604.00 TO NODE 1603.00 IS CODE = 53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1305.00 DOWNSTREAM(FEET) = 1285.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 65.00 CHANNEL SLOPE = 0.3077
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1969 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 8.42
FLOW VELOCITY(FEET/SEC) = 5.05 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 5.50
LONGEST FLOWPATH FROM NODE 1607.00 TO NODE 1603.00 = 812.00 FEET.

*****
FLOW PROCESS FROM NODE 1603.00 TO NODE 1602.00 IS CODE = 53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1285.00 DOWNSTREAM(FEET) = 1245.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 220.00 CHANNEL SLOPE = 0.1818
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1509 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 8.42

```

```

                                P-16.TXT
FLOW VELOCITY(FEET/SEC) = 4.42 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.83    Tc(MIN.) = 6.33
LONGEST FLOWPATH FROM NODE 1607.00 TO NODE 1602.00 = 1032.00 FEET.

*****
FLOW PROCESS FROM NODE 1602.00 TO NODE 1602.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.33
RAINFALL INTENSITY(INCH/HR) = 7.92
TOTAL STREAM AREA(ACRES) = 1.06
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.42

*****
FLOW PROCESS FROM NODE 1610.00 TO NODE 1609.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1590.00
DOWNSTREAM ELEVATION(FEET) = 1575.00
ELEVATION DIFFERENCE(FEET) = 15.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.945
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.247
SUBAREA RUNOFF(CFS) = 0.61
TOTAL AREA(ACRES) = 0.21    TOTAL RUNOFF(CFS) = 0.61

*****
FLOW PROCESS FROM NODE 1609.00 TO NODE 1608.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1575.00    DOWNSTREAM(FEET) = 1315.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 550.00    CHANNEL SLOPE = 0.4727
CHANNEL BASE(FEET) = 3.00    "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030    MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.540
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.78

```

P-16.TXT

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 10.34
 AVERAGE FLOW DEPTH(FEET) = 0.19 TRAVEL TIME(MIN.) = 0.89
 Tc(MIN.) = 6.83
 SUBAREA AREA(ACRES) = 5.42 SUBAREA RUNOFF(CFS) = 12.26
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.302
 TOTAL AREA(ACRES) = 5.6 PEAK FLOW RATE(CFS) = 12.81

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.28 FLOW VELOCITY(FEET/SEC.) = 12.89
 LONGEST FLOWPATH FROM NODE 1610.00 TO NODE 1608.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 1608.00 TO NODE 1602.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1315.00 DOWNSTREAM(FEET) = 1245.00
 FLOW LENGTH(FEET) = 605.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 17.85
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 12.81
 PIPE TRAVEL TIME(MIN.) = 0.56 Tc(MIN.) = 7.40
 LONGEST FLOWPATH FROM NODE 1610.00 TO NODE 1602.00 = 1245.00 FEET.

FLOW PROCESS FROM NODE 1602.00 TO NODE 1602.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.40
 RAINFALL INTENSITY(INCH/HR) = 7.16
 TOTAL STREAM AREA(ACRES) = 5.63
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.81

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HR)	AREA (ACRE)
1	8.42	6.33	7.924	1.06
2	12.81	7.40	7.163	5.63

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

P-16.TXT

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.38	6.33	7.924
2	20.43	7.40	7.163

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.43 Tc(MIN.) = 7.40

TOTAL AREA(ACRES) = 6.7

LONGEST FLOWPATH FROM NODE 1610.00 TO NODE 1602.00 = 1245.00 FEET.

FLOW PROCESS FROM NODE 1602.00 TO NODE 1601.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1245.00 DOWNSTREAM(Feet) = 945.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 1085.00 CHANNEL SLOPE = 0.2765

CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.491

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2700

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 35.53

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 14.82

AVERAGE FLOW DEPTH(Feet) = 0.58 TRAVEL TIME(MIN.) = 1.22

Tc(MIN.) = 8.62

SUBAREA AREA(ACRES) = 17.11 SUBAREA RUNOFF(CFS) = 29.99

AREA-AVERAGE RUNOFF COEFFICIENT = 0.305

TOTAL AREA(ACRES) = 23.8 PEAK FLOW RATE(CFS) = 47.08

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 0.67 FLOW VELOCITY(Feet/Sec.) = 16.06

LONGEST FLOWPATH FROM NODE 1610.00 TO NODE 1601.00 = 2330.00 FEET.

FLOW PROCESS FROM NODE 1601.00 TO NODE 16.00 IS CODE = 41

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(Feet) = 950.00 DOWNSTREAM(Feet) = 850.00

FLOW LENGTH(Feet) = 605.00 MANNING'S N = 0.015

DEPTH OF FLOW IN 42.0 INCH PIPE IS 10.6 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 24.64

GIVEN PIPE DIAMETER(INCH) = 42.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 47.08

P-16.TXT
PIPE TRAVEL TIME(MIN.) = 0.41 Tc(MIN.) = 9.03
LONGEST FLOWPATH FROM NODE 1610.00 TO NODE 16.00 = 2935.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 23.8 TC(MIN.) = 9.03
PEAK FLOW RATE(CFS) = 47.08

=====

=====

END OF RATIONAL METHOD ANALYSIS



Detention 1604

Node to Node		Code	C Factor	Area (ac.)	C x A
1607	1606	2	0.88	0.11	0.10
1606	1605	6	0.88	0.95	0.84
			Total	1.06	0.93
			Avg C =	0.88	

BASIN 1604

PROPOSED CONDITIONS

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 9/9/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 5 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 1.06 ACRES
RUNOFF COEFFICIENT 0.88
PEAK DISCHARGE 8.42 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 5	DISCHARGE (CFS) = 0.2
TIME (MIN) = 10	DISCHARGE (CFS) = 0.2
TIME (MIN) = 15	DISCHARGE (CFS) = 0.2
TIME (MIN) = 20	DISCHARGE (CFS) = 0.2
TIME (MIN) = 25	DISCHARGE (CFS) = 0.2
TIME (MIN) = 30	DISCHARGE (CFS) = 0.2
TIME (MIN) = 35	DISCHARGE (CFS) = 0.2
TIME (MIN) = 40	DISCHARGE (CFS) = 0.2
TIME (MIN) = 45	DISCHARGE (CFS) = 0.2
TIME (MIN) = 50	DISCHARGE (CFS) = 0.2
TIME (MIN) = 55	DISCHARGE (CFS) = 0.2
TIME (MIN) = 60	DISCHARGE (CFS) = 0.2
TIME (MIN) = 65	DISCHARGE (CFS) = 0.2
TIME (MIN) = 70	DISCHARGE (CFS) = 0.2
TIME (MIN) = 75	DISCHARGE (CFS) = 0.2
TIME (MIN) = 80	DISCHARGE (CFS) = 0.2
TIME (MIN) = 85	DISCHARGE (CFS) = 0.3
TIME (MIN) = 90	DISCHARGE (CFS) = 0.3
TIME (MIN) = 95	DISCHARGE (CFS) = 0.3
TIME (MIN) = 100	DISCHARGE (CFS) = 0.3
TIME (MIN) = 105	DISCHARGE (CFS) = 0.3
TIME (MIN) = 110	DISCHARGE (CFS) = 0.3
TIME (MIN) = 115	DISCHARGE (CFS) = 0.3
TIME (MIN) = 120	DISCHARGE (CFS) = 0.3
TIME (MIN) = 125	DISCHARGE (CFS) = 0.3

TIME (MIN) = 130 DISCHARGE (CFS) = 0.3
TIME (MIN) = 135 DISCHARGE (CFS) = 0.3
TIME (MIN) = 140 DISCHARGE (CFS) = 0.3
TIME (MIN) = 145 DISCHARGE (CFS) = 0.3
TIME (MIN) = 150 DISCHARGE (CFS) = 0.4
TIME (MIN) = 155 DISCHARGE (CFS) = 0.4
TIME (MIN) = 160 DISCHARGE (CFS) = 0.4
TIME (MIN) = 165 DISCHARGE (CFS) = 0.4
TIME (MIN) = 170 DISCHARGE (CFS) = 0.4
TIME (MIN) = 175 DISCHARGE (CFS) = 0.4
TIME (MIN) = 180 DISCHARGE (CFS) = 0.4
TIME (MIN) = 185 DISCHARGE (CFS) = 0.5
TIME (MIN) = 190 DISCHARGE (CFS) = 0.5
TIME (MIN) = 195 DISCHARGE (CFS) = 0.5
TIME (MIN) = 200 DISCHARGE (CFS) = 0.6
TIME (MIN) = 205 DISCHARGE (CFS) = 0.6
TIME (MIN) = 210 DISCHARGE (CFS) = 0.7
TIME (MIN) = 215 DISCHARGE (CFS) = 0.8
TIME (MIN) = 220 DISCHARGE (CFS) = 0.8
TIME (MIN) = 225 DISCHARGE (CFS) = 1
TIME (MIN) = 230 DISCHARGE (CFS) = 1.2
TIME (MIN) = 235 DISCHARGE (CFS) = 1.7
TIME (MIN) = 240 DISCHARGE (CFS) = 2.6
TIME (MIN) = 245 DISCHARGE (CFS) = 8.42
TIME (MIN) = 250 DISCHARGE (CFS) = 1.4
TIME (MIN) = 255 DISCHARGE (CFS) = 0.9
TIME (MIN) = 260 DISCHARGE (CFS) = 0.7
TIME (MIN) = 265 DISCHARGE (CFS) = 0.6
TIME (MIN) = 270 DISCHARGE (CFS) = 0.5
TIME (MIN) = 275 DISCHARGE (CFS) = 0.5
TIME (MIN) = 280 DISCHARGE (CFS) = 0.4
TIME (MIN) = 285 DISCHARGE (CFS) = 0.4
TIME (MIN) = 290 DISCHARGE (CFS) = 0.4
TIME (MIN) = 295 DISCHARGE (CFS) = 0.3
TIME (MIN) = 300 DISCHARGE (CFS) = 0.3
TIME (MIN) = 305 DISCHARGE (CFS) = 0.3
TIME (MIN) = 310 DISCHARGE (CFS) = 0.3
TIME (MIN) = 315 DISCHARGE (CFS) = 0.3
TIME (MIN) = 320 DISCHARGE (CFS) = 0.3
TIME (MIN) = 325 DISCHARGE (CFS) = 0.2

TIME (MIN) = 330 DISCHARGE (CFS) = 0.2
TIME (MIN) = 335 DISCHARGE (CFS) = 0.2
TIME (MIN) = 340 DISCHARGE (CFS) = 0.2
TIME (MIN) = 345 DISCHARGE (CFS) = 0.2
TIME (MIN) = 350 DISCHARGE (CFS) = 0.2
TIME (MIN) = 355 DISCHARGE (CFS) = 0.2
TIME (MIN) = 360 DISCHARGE (CFS) = 0.2
TIME (MIN) = 365 DISCHARGE (CFS) = 0

Detention 1604 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a project tree for 'Detention 1604 Pr'. The tree structure is as follows:

- Detention 1604 Pr
 - Basin Models
 - Basin 16
 - Basin Inflow** (highlighted)
 - Discharge Gage
 - Detention Basin 1604
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Time-Series Data
 - Discharge Gages
 - Node 1604 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
 - Paired Data
 - Elevation-Storage Functions
 - Basin 1604 Stage-Storage

Below the tree, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active.

Under the 'Components' tab, there are three sub-tabs: 'Source', 'Inflow', and 'Options'. The 'Source' sub-tab is active, showing the configuration for the 'Basin Inflow' element.

Basin Name: Basin 16
Element Name: Basin Inflow

Description:	Node 2118.6	
Downstream:	Detention Basin 1604	
Area (MI2)	0.029	
Flow Method:	Discharge Gage	

Detention 1604 Pr

Basin Models

Basin 16

Basin Inflow

Discharge Gage

Detention Basin 1604

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 1604 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 1604 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 16

Element Name: Detention Basin 1604

Method: Orifice Outlet

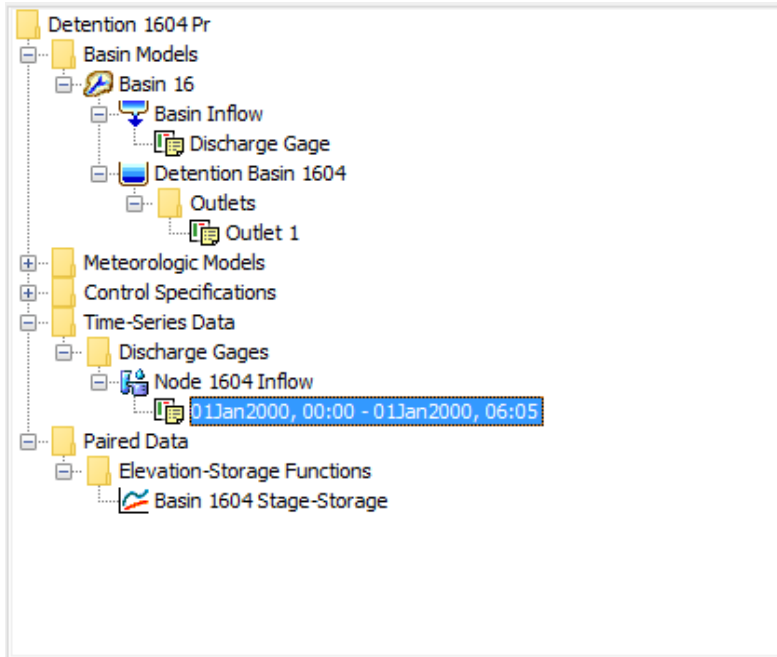
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.25

*Area (FT2) 0.196

*Coefficient: 0.6



Components Compute Results

Time-Series Gage Time Window Table Graph

Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.00
01Jan2000, 00:05	0.20
01Jan2000, 00:10	0.20
01Jan2000, 00:15	0.20
01Jan2000, 00:20	0.20
01Jan2000, 00:25	0.20
01Jan2000, 00:30	0.20
01Jan2000, 00:35	0.20
01Jan2000, 00:40	0.20
01Jan2000, 00:45	0.20
01Jan2000, 00:50	0.20
01Jan2000, 00:55	0.20
01Jan2000, 01:00	0.20
01Jan2000, 01:05	0.20
01Jan2000, 01:10	0.20
01Jan2000, 01:15	0.20
01Jan2000, 01:20	0.20
01Jan2000, 01:25	0.30
01Jan2000, 01:30	0.30
01Jan2000, 01:35	0.30
01Jan2000, 01:40	0.30
01Jan2000, 01:45	0.30
01Jan2000, 01:50	0.30
01Jan2000, 01:55	0.30
01Jan2000, 02:00	0.20

Detention 1604 Pr

- Basin Models
 - Basin 16
 - Basin Inflow
 - Discharge Gage
 - Detention Basin 1604
 - Outlets
 - Outlet 1
- Meteorologic Models
- Control Specifications
- Time-Series Data
 - Discharge Gages
 - Node 1604 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
- Paired Data
 - Elevation-Storage Functions
 - Basin 1604 Stage-Storage

Components Compute Results

Paired Data Table Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	0.439

Project: Detention 1604 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1604

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 16
End of Run:	01Jan2000, 06:05	Meteorologic Model:	Sierra
Compute Time:	10Jan2017, 10:59:02	Control Specifications:	Control 1

Volume Units:IN

Computed Results

Peak Inflow:	8.4 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	1.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:14
Inflow Volume:	0.17 (IN)	Peak Storage:	0.1 (AC-FT)
Discharge Volume:	0.15 (IN)	Peak Elevation:	1.3 (FT)

Observed Hydrograph at Gage Node 1604 Inflow

Peak Discharge:	8.4 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:05
Mean Abs Error:	0.4 (CFS)	RMS Error:	0.9 (CFS)
Volume:	0.17 (IN)	Volume Residual:	-0.03 (IN)
Nash-Sutcliffe:	0.073		

Project: Detention 1604 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1604

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 16
End of Run: 01Jan2000, 06:05 Meteorologic Model: Sierra
Compute Time: 10Jan2017, 10:59:02 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.2	0.0	0.0
01Jan2000	00:01	0.0	0.0	0.3	0.0	0.0
01Jan2000	00:02	0.1	0.0	0.3	0.0	0.1
01Jan2000	00:03	0.1	0.0	0.3	0.0	0.1
01Jan2000	00:04	0.2	0.0	0.3	0.0	0.2
01Jan2000	00:05	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:06	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:07	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:08	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:09	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:10	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:11	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:12	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:13	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:14	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:15	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:16	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:17	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:18	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:19	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:20	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:21	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:22	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:23	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:24	0.2	0.0	0.3	0.1	0.2
01Jan2000	00:25	0.2	0.0	0.3	0.1	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:27	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:28	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:29	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:30	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:31	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:32	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:33	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:34	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:35	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:36	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:37	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:38	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:39	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:40	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:41	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:42	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:43	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:44	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:45	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:46	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:47	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:48	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:49	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:50	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:51	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:52	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:53	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:54	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:55	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:56	0.2	0.0	0.3	0.2	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:58	0.2	0.0	0.3	0.2	0.2
01Jan2000	00:59	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:00	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:01	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:02	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:03	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:04	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:05	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:06	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:07	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:08	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:09	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:10	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:11	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:12	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:13	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:14	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:15	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:16	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:17	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:18	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:19	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:20	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:21	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:22	0.2	0.0	0.3	0.2	0.2
01Jan2000	01:23	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:24	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:25	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:26	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:27	0.3	0.0	0.3	0.2	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:29	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:30	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:31	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:32	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:33	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:34	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:35	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:36	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:37	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:38	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:39	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:40	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:41	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:42	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:43	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:44	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:45	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:46	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:47	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:48	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:49	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:50	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:51	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:52	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:53	0.3	0.0	0.3	0.2	0.3
01Jan2000	01:54	0.3	0.0	0.3	0.3	0.3
01Jan2000	01:55	0.3	0.0	0.3	0.3	0.3
01Jan2000	01:56	0.3	0.0	0.3	0.3	0.3
01Jan2000	01:57	0.3	0.0	0.3	0.3	0.3
01Jan2000	01:58	0.3	0.0	0.3	0.3	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:00	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:01	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:02	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:03	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:04	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:05	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:06	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:07	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:08	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:09	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:10	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:11	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:12	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:13	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:14	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:15	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:16	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:17	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:18	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:19	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:20	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:21	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:22	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:23	0.2	0.0	0.3	0.3	0.2
01Jan2000	02:24	0.2	0.0	0.3	0.3	0.2
01Jan2000	02:25	0.2	0.0	0.3	0.3	0.2
01Jan2000	02:26	0.2	0.0	0.3	0.3	0.2
01Jan2000	02:27	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:28	0.3	0.0	0.3	0.3	0.3
01Jan2000	02:29	0.4	0.0	0.3	0.3	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:31	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:32	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:33	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:34	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:35	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:36	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:37	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:38	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:39	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:40	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:41	0.4	0.0	0.3	0.3	0.4
01Jan2000	02:42	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:43	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:44	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:45	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:46	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:47	0.4	0.0	0.4	0.3	0.4
01Jan2000	02:48	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:49	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:50	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:51	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:52	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:53	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:54	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:55	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:56	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:57	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:58	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:59	0.5	0.0	0.4	0.3	0.5
01Jan2000	03:00	0.5	0.0	0.4	0.3	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	0.5	0.0	0.4	0.3	0.5
01Jan2000	03:02	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:03	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:04	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:05	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:06	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:07	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:08	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:09	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:10	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:11	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:12	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:13	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:14	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:15	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:16	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:17	0.5	0.0	0.4	0.4	0.5
01Jan2000	03:18	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:19	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:20	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:21	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:22	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:23	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:24	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:25	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:26	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:27	0.6	0.0	0.4	0.4	0.6
01Jan2000	03:28	0.7	0.0	0.4	0.4	0.7
01Jan2000	03:29	0.7	0.0	0.4	0.4	0.7
01Jan2000	03:30	0.7	0.0	0.4	0.4	0.7
01Jan2000	03:31	0.7	0.0	0.5	0.4	0.7

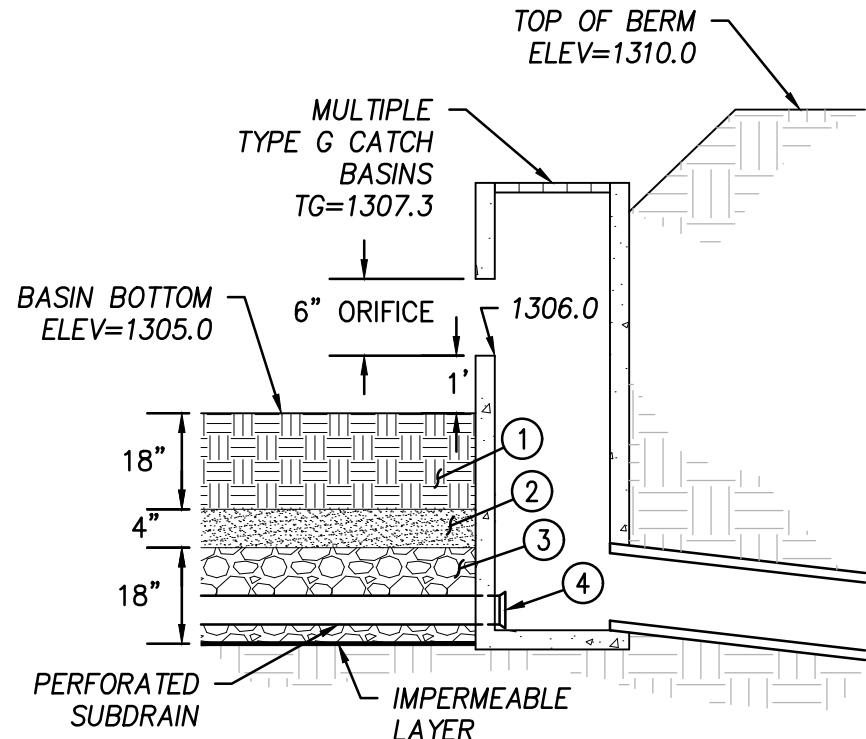
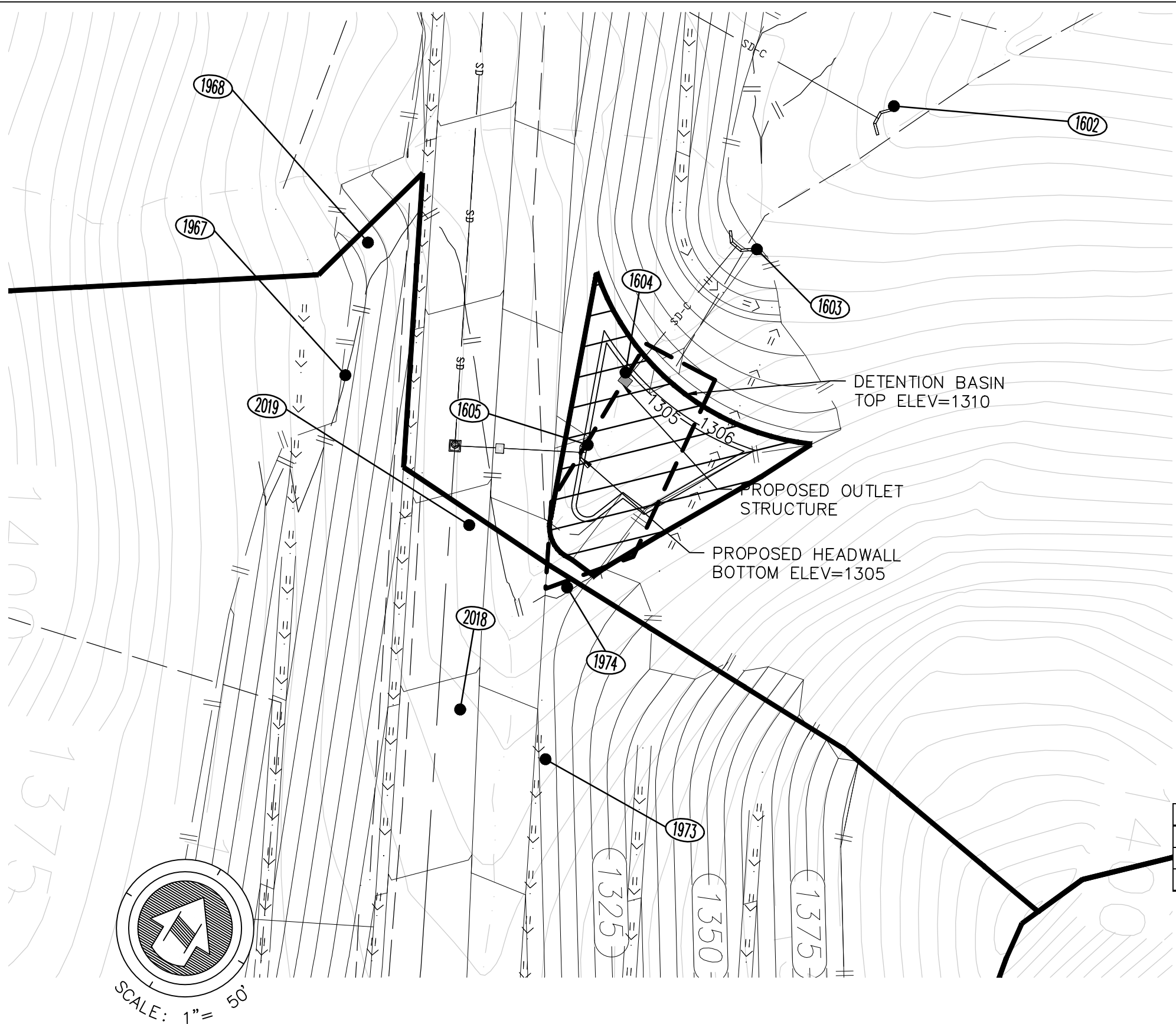
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	0.7	0.1	0.5	0.4	0.7
01Jan2000	03:33	0.8	0.1	0.5	0.4	0.8
01Jan2000	03:34	0.8	0.1	0.5	0.4	0.8
01Jan2000	03:35	0.8	0.1	0.5	0.4	0.8
01Jan2000	03:36	0.8	0.1	0.5	0.4	0.8
01Jan2000	03:37	0.8	0.1	0.5	0.4	0.8
01Jan2000	03:38	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:39	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:40	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:41	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:42	0.9	0.1	0.5	0.5	0.9
01Jan2000	03:43	0.9	0.1	0.5	0.5	0.9
01Jan2000	03:44	1.0	0.1	0.5	0.5	1.0
01Jan2000	03:45	1.0	0.1	0.5	0.5	1.0
01Jan2000	03:46	1.0	0.1	0.5	0.5	1.0
01Jan2000	03:47	1.1	0.1	0.5	0.5	1.1
01Jan2000	03:48	1.1	0.1	0.5	0.5	1.1
01Jan2000	03:49	1.2	0.1	0.5	0.5	1.2
01Jan2000	03:50	1.2	0.1	0.6	0.5	1.2
01Jan2000	03:51	1.3	0.1	0.6	0.5	1.3
01Jan2000	03:52	1.4	0.1	0.6	0.5	1.4
01Jan2000	03:53	1.5	0.1	0.6	0.5	1.5
01Jan2000	03:54	1.6	0.1	0.6	0.6	1.6
01Jan2000	03:55	1.7	0.1	0.6	0.6	1.7
01Jan2000	03:56	1.9	0.1	0.6	0.6	1.9
01Jan2000	03:57	2.1	0.1	0.6	0.6	2.1
01Jan2000	03:58	2.2	0.1	0.7	0.6	2.2
01Jan2000	03:59	2.4	0.1	0.7	0.6	2.4
01Jan2000	04:00	2.6	0.1	0.7	0.6	2.6
01Jan2000	04:01	3.8	0.1	0.7	0.7	3.8
01Jan2000	04:02	4.9	0.1	0.8	0.7	4.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	6.1	0.1	0.8	0.7	6.1
01Jan2000	04:04	7.3	0.1	0.9	0.8	7.3
01Jan2000	04:05	8.4	0.1	1.0	0.8	8.4
01Jan2000	04:06	7.0	0.1	1.1	0.9	7.0
01Jan2000	04:07	5.6	0.1	1.2	0.9	5.6
01Jan2000	04:08	4.2	0.1	1.2	0.9	4.2
01Jan2000	04:09	2.8	0.1	1.2	0.9	2.8
01Jan2000	04:10	1.4	0.1	1.3	0.9	1.4
01Jan2000	04:11	1.3	0.1	1.3	1.0	1.3
01Jan2000	04:12	1.2	0.1	1.3	1.0	1.2
01Jan2000	04:13	1.1	0.1	1.3	1.0	1.1
01Jan2000	04:14	1.0	0.1	1.3	1.0	1.0
01Jan2000	04:15	0.9	0.1	1.3	1.0	0.9
01Jan2000	04:16	0.9	0.1	1.3	1.0	0.9
01Jan2000	04:17	0.8	0.1	1.3	1.0	0.8
01Jan2000	04:18	0.8	0.1	1.3	1.0	0.8
01Jan2000	04:19	0.7	0.1	1.3	1.0	0.7
01Jan2000	04:20	0.7	0.1	1.3	0.9	0.7
01Jan2000	04:21	0.7	0.1	1.3	0.9	0.7
01Jan2000	04:22	0.7	0.1	1.3	0.9	0.7
01Jan2000	04:23	0.6	0.1	1.3	0.9	0.6
01Jan2000	04:24	0.6	0.1	1.2	0.9	0.6
01Jan2000	04:25	0.6	0.1	1.2	0.9	0.6
01Jan2000	04:26	0.6	0.1	1.2	0.9	0.6
01Jan2000	04:27	0.6	0.1	1.2	0.9	0.6
01Jan2000	04:28	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:29	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:30	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:31	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:32	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:33	0.5	0.1	1.2	0.9	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:35	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:36	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:37	0.5	0.1	1.2	0.9	0.5
01Jan2000	04:38	0.4	0.1	1.2	0.9	0.4
01Jan2000	04:39	0.4	0.1	1.2	0.9	0.4
01Jan2000	04:40	0.4	0.1	1.2	0.9	0.4
01Jan2000	04:41	0.4	0.1	1.2	0.9	0.4
01Jan2000	04:42	0.4	0.1	1.2	0.9	0.4
01Jan2000	04:43	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:44	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:45	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:46	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:47	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:48	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:49	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:50	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:51	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:52	0.4	0.1	1.1	0.9	0.4
01Jan2000	04:53	0.3	0.1	1.1	0.9	0.3
01Jan2000	04:54	0.3	0.1	1.1	0.9	0.3
01Jan2000	04:55	0.3	0.1	1.1	0.9	0.3
01Jan2000	04:56	0.3	0.1	1.1	0.9	0.3
01Jan2000	04:57	0.3	0.1	1.1	0.8	0.3
01Jan2000	04:58	0.3	0.1	1.1	0.8	0.3
01Jan2000	04:59	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:00	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:01	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:02	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:03	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:04	0.3	0.1	1.0	0.8	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:06	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:07	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:08	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:09	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:10	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:11	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:12	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:13	0.3	0.1	1.0	0.8	0.3
01Jan2000	05:14	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:15	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:16	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:17	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:18	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:19	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:20	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:21	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:22	0.3	0.1	0.9	0.8	0.3
01Jan2000	05:23	0.2	0.1	0.9	0.8	0.2
01Jan2000	05:24	0.2	0.1	0.9	0.8	0.2
01Jan2000	05:25	0.2	0.1	0.9	0.7	0.2
01Jan2000	05:26	0.2	0.1	0.9	0.7	0.2
01Jan2000	05:27	0.2	0.1	0.9	0.7	0.2
01Jan2000	05:28	0.2	0.1	0.9	0.7	0.2
01Jan2000	05:29	0.2	0.1	0.9	0.7	0.2
01Jan2000	05:30	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:31	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:32	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:33	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:34	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:35	0.2	0.1	0.8	0.7	0.2

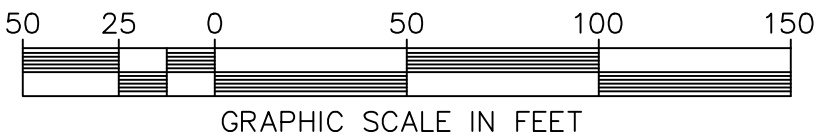
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:37	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:38	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:39	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:40	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:41	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:42	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:43	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:44	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:45	0.2	0.1	0.8	0.7	0.2
01Jan2000	05:46	0.2	0.1	0.7	0.7	0.2
01Jan2000	05:47	0.2	0.1	0.7	0.7	0.2
01Jan2000	05:48	0.2	0.1	0.7	0.7	0.2
01Jan2000	05:49	0.2	0.1	0.7	0.7	0.2
01Jan2000	05:50	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:51	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:52	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:53	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:54	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:55	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:56	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:57	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:58	0.2	0.1	0.7	0.6	0.2
01Jan2000	05:59	0.2	0.1	0.7	0.6	0.2
01Jan2000	06:00	0.2	0.1	0.7	0.6	0.2
01Jan2000	06:01	0.2	0.1	0.7	0.6	0.2
01Jan2000	06:02	0.1	0.1	0.7	0.6	0.1
01Jan2000	06:03	0.1	0.1	0.7	0.6	0.1
01Jan2000	06:04	0.0	0.1	0.6	0.6	0.0
01Jan2000	06:05	0.0	0.1	0.6	0.6	0.0



- CONSTRUCTION NOTES:**
- ① 18" BIORETENTION SOIL MEDIA
 - ② 4" MEDIA BARRIER. (2" WASHED SAND OVER 2" #8 STONE)
 - ③ 18" DRAINAGE LAYER (WASHED #57 STONE)
 - ④ END CAP WITH ORIFICE PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN A - PROPOSED DETENTION 1604 (BMP TR2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1306	0	3185	0.07	0.000
1310	4	6385	0.15	0.439



NEWLAND SIERRA
BASIN A - PROPOSED DETENTION BASINS
DETENTION 1604 (BMP TR2)

APPENDIX B

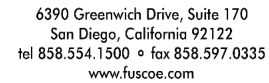
Proposed Detention Storage Analysis

SUB-BASIN 19

[illegible]

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
1979	1978	3	1195	1179	220						
1978	1978	1						1 of 2			
1978.4	1978.2	2	1235	1228	75	0.6	0.16				
1978.2	1978	6	1228	1185	610	0.59	1.15	2 sides			
1978	1978	1						2 of 2			
1978	1977	3	1179	1178	60						
1977	1977	11						add bank 1			
1977	1977	12						clear bank 1			
1977	1976	3	1178	1104	700						
1976	1976	1						1 of 2			
1976.4	1976.2	2	1186	1180	80	0.88	0.22				
1976.2	1976	6	1184	1115	780	0.89	1.36	1 side			
1976	1976	1						2 of 2			
1976	1975	3	1109	1070	625						
1975	1906.5	5	1070	1054	165	0.25	4.08				
1906.5	1906	3	1048	1047	25						
1906	1906	10						save to bank 1			
1968	1967	2	1320	1315	90	0.25	0.07				
1967	1964	5	1315	1270	730	0.27	0.74				
1964	1963	3	1264	1262	25						
1963	1963	1						1 of 2			
1974	1973	2	1310	1305	75	0.35	0.19				
1973	1972	5	1305	1270	580	0.27	2.32				
1972	1963	3	1264	1262	60						
1963	1963	1						2 of 2			
1963	1963.5	3	1262	1261.5	26						
1963.5	1963.5	10						save to bank 2			
1971	1970	2	1589	1558	100	0.35	0.44				
1970	1969	5	1558	1326	1020	0.27	7.17				
1969	1969	1						1 of 3			
1951	1950	2	1600	1529	100	0.35	0.14				
1950	1969	5	1529	1272	900	0.35	4.85				
1969	1969	1						2 of 3			
1958	1957	2	1435	1405	100	0.35	0.18				

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
1926	1925	3	1210	1196	195						
1925	1925	11						add bank 3			
1925	1925	12						clear bank 3			
1925	1924	3	1196	1178	285						
1924	1924	11						add bank 2			
1924	1924	12						clear bank 2			
1924	1912	3	1178	1087.4	690						
1912	1912	10						Save to bank 2			
1921.5	1921	2	1201	1200	65	0.25	0.05				
1921	1920	5	1200	1195	475	0.25	0.82	brow ditch			
1920	1917	3	1189	1183	25						
1917	1917	1						1 of 2			
1919	1918	2	1200	1198	80	0.58	0.11				
1918	1917	6	1198	1189	545	0.58	2.71				
1917	1917	1						2 of 2			
1917	1914	3	1189	1173	215						
1914	1914	1						1 of 2			
1916	1915	2	1193	1189	95	0.58	0.23				
1915	1914	6	1189	1179	780	0.58	3.23				
1914	1914	1						2 of 2			
1914	1913	3	1173	1089	130						
1913	1913	1						1 of 2			
1923	1922	2	1180	1168	90	0.25	0.06				
1922	1913	5	1168	1095	675	0.25	0.67				
1913	1913	1						2 of 2			
1913	1912	3	1089	1087.4	160						
1912	1912	11						Add bank 2			
1912	1912	12						Clear bank 2			
1912	1911	3	1087.4	1079	220						
1911	1911	1						1 of 2			
1911.4	1911.2	2	1150	1140	70	0.3	0.08				
1911.2	1911	5	1140	1085	250	0.25	0.53				
1911	1911	1						2 of 2			



Job #: 2660-02

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[illegible]

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2014 Advanced Engineering Software (aes)
 Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
 6390 Greenwich Drive
 Suite 200
 San Diego, CA 92122

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * SUB BASIN 19 WITH NO DETENTION *
 * *

FILE NAME: P-19.DAT
 TIME/DATE OF STUDY: 14:51 01/19/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 3.500
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES: WIDTH	LIP	HIKE	MANNING FACTOR
	(FT)	(FT)		(FT)	(FT)	(FT)	(FT)	(n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50	0.0312	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2025.00 TO NODE 2024.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6300
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(Feet) = 100.00
 UPSTREAM ELEVATION(Feet) = 1295.00
 DOWNSTREAM ELEVATION(Feet) = 1293.00
 ELEVATION DIFFERENCE(Feet) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.006
 WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
 Page 1

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THE MAXIMUM OVERLAND FLOW LENGTH = 80.00
 (Reference: Table 3-1B of Hydrology Manual)
 THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.193
 SUBAREA RUNOFF(CFS) = 0.72
 TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.72

 FLOW PROCESS FROM NODE 2024.00 TO NODE 2023.00 IS CODE = 51

 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====
 ELEVATION DATA: UPSTREAM(FEET) = 1293.00 DOWNSTREAM(FEET) = 1275.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 930.00 CHANNEL SLOPE = 0.0194
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.206
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6300
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 18.68
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.80
 AVERAGE FLOW DEPTH(FEET) = 0.83 TRAVEL TIME(MIN.) = 3.23
 Tc(MIN.) = 9.24
 SUBAREA AREA(ACRES) = 9.04 SUBAREA RUNOFF(CFS) = 35.35
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.630
 TOTAL AREA(ACRES) = 9.2 PEAK FLOW RATE(CFS) = 35.89

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 1.17 FLOW VELOCITY(FEET/SEC.) = 5.73
 LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2023.00 = 1030.00 FEET.

 FLOW PROCESS FROM NODE 2023.00 TO NODE 2020.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====
 ELEVATION DATA: UPSTREAM(FEET) = 1269.00 DOWNSTREAM(FEET) = 1259.00
 FLOW LENGTH(FEET) = 250.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.30
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 35.89
 PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 9.51
 LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2020.00 = 1280.00 FEET.

 FLOW PROCESS FROM NODE 2020.00 TO NODE 2020.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====
 TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.51
 RAINFALL INTENSITY(INCH/HR) = 6.09
 TOTAL STREAM AREA(ACRES) = 9.18
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 35.89

 FLOW PROCESS FROM NODE 2022.00 TO NODE 2021.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .6300

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00

UPSTREAM ELEVATION(FEET) = 1284.00

DOWNSTREAM ELEVATION(FEET) = 1283.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.748

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.35

TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.35

FLOW PROCESS FROM NODE 2021.00 TO NODE 2020.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1283.00 DOWNSTREAM ELEVATION(FEET) = 1265.00

STREET LENGTH(FEET) = 315.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.34

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.17

HALFSTREET FLOOD WIDTH(FEET) = 2.26

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.97

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.68

STREET FLOW TRAVEL TIME(MIN.) = 1.32 Tc(MIN.) = 6.07

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.136

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .6300

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.630

SUBAREA AREA(ACRES) = 0.39 SUBAREA RUNOFF(CFS) = 2.00

TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 2.31

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.26

FLOW VELOCITY(FEET/SEC.) = 3.85 DEPTH*VELOCITY(FT*FT/SEC.) = 0.81

LONGEST FLOWPATH FROM NODE 2022.00 TO NODE 2020.00 = 365.00 FEET.

FLOW PROCESS FROM NODE 2020.00 TO NODE 2020.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 6.07

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RAINFALL INTENSITY(INCH/HR) = 8.14
TOTAL STREAM AREA(ACRES) = 0.45
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.31

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	35.89	9.51	6.091	9.18
2	2.31	6.07	8.136	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	25.22	6.07	8.136
2	37.62	9.51	6.091

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 37.62 Tc(MIN.) = 9.51
TOTAL AREA(ACRES) = 9.6
LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2020.00 = 1280.00 FEET.

FLOW PROCESS FROM NODE 2020.00 TO NODE 2017.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1258.00
FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.39
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 37.62
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 9.57
LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2017.00 = 1325.00 FEET.

FLOW PROCESS FROM NODE 2017.00 TO NODE 2017.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.57
RAINFALL INTENSITY(INCH/HR) = 6.07
TOTAL STREAM AREA(ACRES) = 9.63
PEAK FLOW RATE(CFS) AT CONFLUENCE = 37.62

FLOW PROCESS FROM NODE 2019.00 TO NODE 2018.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1310.00
DOWNSTREAM ELEVATION(FEET) = 1305.00
ELEVATION DIFFERENCE(FEET) = 5.00

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.219
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.14
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 1.14

FLOW PROCESS FROM NODE 2018.00 TO NODE 2017.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1305.00 DOWNSTREAM ELEVATION(FEET) = 1270.00
STREET LENGTH(FEET) = 590.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.03
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.31
HALFSTREET FLOOD WIDTH(FEET) = 9.17
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.25
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.63
STREET FLOW TRAVEL TIME(MIN.) = 1.87 Tc(MIN.) = 4.09
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.889
SUBAREA AREA(ACRES) = 0.95 SUBAREA RUNOFF(CFS) = 7.80
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 8.93

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.72
FLOW VELOCITY(FEET/SEC.) = 5.99 DEPTH*VELOCITY(FT*FT/SEC.) = 2.16
LONGEST FLOWPATH FROM NODE 2019.00 TO NODE 2017.00 = 685.00 FEET.

FLOW PROCESS FROM NODE 2017.00 TO NODE 2017.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 4.09
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.09
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.93

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	37.62	9.57	6.066	9.63

2 8.93 4.09 P-19
9.222 1.09

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	33.68	4.09	9.222
2	43.50	9.57	6.066

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 43.50 Tc(MIN.) = 9.57

TOTAL AREA(ACRES) = 10.7

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2017.00 = 1325.00 FEET.

FLOW PROCESS FROM NODE 2017.00 TO NODE 2014.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1258.00 DOWNSTREAM(FEET) = 1179.00
FLOW LENGTH(FEET) = 855.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.62
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 43.50
PIPE TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 10.23
LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2014.00 = 2180.00 FEET.

FLOW PROCESS FROM NODE 2014.00 TO NODE 2014.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.23
RAINFALL INTENSITY(INCH/HR) = 5.81
TOTAL STREAM AREA(ACRES) = 10.72
PEAK FLOW RATE(CFS) AT CONFLUENCE = 43.50

FLOW PROCESS FROM NODE 2016.00 TO NODE 2015.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1270.00
DOWNSTREAM ELEVATION(FEET) = 1264.00
ELEVATION DIFFERENCE(FEET) = 6.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.472
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.41
TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 1.41

FLOW PROCESS FROM NODE 2015.00 TO NODE 2014.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1264.00 DOWNSTREAM ELEVATION(FEET) = 1185.00
 STREET LENGTH(FEET) = 810.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.42
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.33
 HALFSTREET FLOOD WIDTH(FEET) = 10.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 7.09
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 2.36
 STREET FLOW TRAVEL TIME(MIN.) = 1.90 Tc(MIN.) = 3.38
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
 SUBAREA AREA(ACRES) = 1.69 SUBAREA RUNOFF(CFS) = 14.03
 TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 15.44

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.28
 FLOW VELOCITY(FEET/SEC.) = 8.20 DEPTH*VELOCITY(FT*FT/SEC.) = 3.21
 LONGEST FLOWPATH FROM NODE 2016.00 TO NODE 2014.00 = 880.00 FEET.

FLOW PROCESS FROM NODE 2014.00 TO NODE 2014.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.38
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 1.86
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.44

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	43.50	10.23	5.811	10.72
2	15.44	3.38	9.222	1.86

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
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			P-19
1	42.85	3.38	9.222
2	53.23	10.23	5.811

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 53.23 Tc(MIN.) = 10.23

TOTAL AREA(ACRES) = 12.6

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 2014.00 = 2180.00 FEET.

FLOW PROCESS FROM NODE 2014.00 TO NODE 1977.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1185.00 DOWNSTREAM(FEET) = 1183.00

FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 17.52

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 53.23

PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 10.27

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1977.00 = 2225.00 FEET.

FLOW PROCESS FROM NODE 1977.00 TO NODE 1977.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 1989.00 TO NODE 1988.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .6300

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00

UPSTREAM ELEVATION(FEET) = 1284.00

DOWNSTREAM ELEVATION(FEET) = 1283.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.431

WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN

THE MAXIMUM OVERLAND FLOW LENGTH = 70.00

(Reference: Table 3-1B of Hydrology Manual)

THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.840

SUBAREA RUNOFF(CFS) = 0.44

TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.44

FLOW PROCESS FROM NODE 1988.00 TO NODE 1987.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1283.00 DOWNSTREAM ELEVATION(FEET) = 1235.00

STREET LENGTH(FEET) = 490.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

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SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.83
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.18
 HALFSTREET FLOOD WIDTH(FEET) = 2.46
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.13
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.90
 STREET FLOW TRAVEL TIME(MIN.) = 1.59 Tc(MIN.) = 8.02
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.797
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .6300
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.630
 SUBAREA AREA(ACRES) = 0.65 SUBAREA RUNOFF(CFS) = 2.78
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 3.17

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.39
 FLOW VELOCITY(FEET/SEC.) = 5.10 DEPTH*VELOCITY(FT*FT/SEC.) = 1.09
 LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1987.00 = 565.00 FEET.

 FLOW PROCESS FROM NODE 1987.00 TO NODE 1983.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1229.00 DOWNSTREAM(FEET) = 1214.00
 FLOW LENGTH(FEET) = 165.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.04
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.17
 PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 8.27
 LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1983.00 = 730.00 FEET.

 FLOW PROCESS FROM NODE 1983.00 TO NODE 1983.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.27
 RAINFALL INTENSITY(INCH/HR) = 6.66
 TOTAL STREAM AREA(ACRES) = 0.74
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.17

 FLOW PROCESS FROM NODE 1986.00 TO NODE 1985.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5900
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

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UPSTREAM ELEVATION(FEET) = 1228.00
DOWNSTREAM ELEVATION(FEET) = 1226.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.050
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.155
SUBAREA RUNOFF(CFS) = 0.48
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.48

FLOW PROCESS FROM NODE 1985.00 TO NODE 1984.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1226.00 DOWNSTREAM(FEET) = 1221.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 185.00 CHANNEL SLOPE = 0.0270
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.377
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5800
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.99
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.03
AVERAGE FLOW DEPTH(FEET) = 0.28 TRAVEL TIME(MIN.) = 1.02
Tc(MIN.) = 7.07
SUBAREA AREA(ACRES) = 1.17 SUBAREA RUNOFF(CFS) = 5.01
AREA-AVERAGE RUNOFF COEFFICIENT = 0.581
TOTAL AREA(ACRES) = 1.3 PEAK FLOW RATE(CFS) = 5.44

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.39 FLOW VELOCITY(FEET/SEC.) = 3.73
LONGEST FLOWPATH FROM NODE 1986.00 TO NODE 1984.00 = 265.00 FEET.

FLOW PROCESS FROM NODE 1984.00 TO NODE 1983.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1215.00 DOWNSTREAM(FEET) = 1214.00
FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.42
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.44
PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 7.26
LONGEST FLOWPATH FROM NODE 1986.00 TO NODE 1983.00 = 340.00 FEET.

FLOW PROCESS FROM NODE 1983.00 TO NODE 1983.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.26
RAINFALL INTENSITY(INCH/HR) = 7.25
TOTAL STREAM AREA(ACRES) = 1.27
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.44

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	3.17	8.27	6.664	0.74
2	5.44	7.26	7.249	1.27

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.22	7.26	7.249
2	8.17	8.27	6.664

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.22 Tc(MIN.) = 7.26

TOTAL AREA(ACRES) = 2.0

LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1983.00 = 730.00 FEET.

FLOW PROCESS FROM NODE 1983.00 TO NODE 1979.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1214.00 DOWNSTREAM(FEET) = 1194.00

FLOW LENGTH(FEET) = 335.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 12.44

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 8.22

PIPE TRAVEL TIME(MIN.) = 0.45 Tc(MIN.) = 7.71

LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1979.00 = 1065.00 FEET.

FLOW PROCESS FROM NODE 1979.00 TO NODE 1979.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 7.71

RAINFALL INTENSITY(INCH/HR) = 6.97

TOTAL STREAM AREA(ACRES) = 2.01

PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.22

FLOW PROCESS FROM NODE 1982.00 TO NODE 1981.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .6300

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00

UPSTREAM ELEVATION(FEET) = 1267.00

DOWNSTREAM ELEVATION(FEET) = 1264.00

ELEVATION DIFFERENCE(FEET) = 3.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.373

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.803

SUBAREA RUNOFF(CFS) = 0.78

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TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.78

FLOW PROCESS FROM NODE 1981.00 TO NODE 1980.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1239.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 725.00 CHANNEL SLOPE = 0.0345
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.052
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .6300
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 14.89
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.48
AVERAGE FLOW DEPTH(FEET) = 0.64 TRAVEL TIME(MIN.) = 2.21
Tc(MIN.) = 7.58
SUBAREA AREA(ACRES) = 6.28 SUBAREA RUNOFF(CFS) = 27.90
AREA-AVERAGE RUNOFF COEFFICIENT = 0.630
TOTAL AREA(ACRES) = 6.4 PEAK FLOW RATE(CFS) = 28.52

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.90 FLOW VELOCITY(FEET/SEC.) = 6.63
LONGEST FLOWPATH FROM NODE 1982.00 TO NODE 1980.00 = 815.00 FEET.

FLOW PROCESS FROM NODE 1980.00 TO NODE 1979.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1233.00 DOWNSTREAM(FEET) = 1195.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 34.11
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 28.52
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 7.63
LONGEST FLOWPATH FROM NODE 1982.00 TO NODE 1979.00 = 915.00 FEET.

FLOW PROCESS FROM NODE 1979.00 TO NODE 1979.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.63
RAINFALL INTENSITY(INCH/HR) = 7.02
TOTAL STREAM AREA(ACRES) = 6.42
PEAK FLOW RATE(CFS) AT CONFLUENCE = 28.52

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.22	7.71	6.974	2.01
2	28.52	7.63	7.023	6.42

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	36.69	7.63	7.023
2	36.55	7.71	6.974

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 36.69 Tc(MIN.) = 7.63
TOTAL AREA(ACRES) = 8.4
LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1979.00 = 1065.00 FEET.

FLOW PROCESS FROM NODE 1979.00 TO NODE 1978.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1195.00 DOWNSTREAM(FEET) = 1179.00
FLOW LENGTH(FEET) = 220.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 19.09
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 36.69
PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 7.82
LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1978.00 = 1285.00 FEET.

FLOW PROCESS FROM NODE 1978.00 TO NODE 1978.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 7.82
RAINFALL INTENSITY(INCH/HR) = 6.91
TOTAL STREAM AREA(ACRES) = 8.43
PEAK FLOW RATE(CFS) AT CONFLUENCE = 36.69

FLOW PROCESS FROM NODE 1978.40 TO NODE 1978.20 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .6000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1235.00
DOWNSTREAM ELEVATION(FEET) = 1228.00
ELEVATION DIFFERENCE(FEET) = 7.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.702
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.89
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.89

FLOW PROCESS FROM NODE 1978.20 TO NODE 1978.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1228.00 DOWNSTREAM ELEVATION(FEET) = 1185.00
 STREET LENGTH(FEET) = 610.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.70
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.38
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.53
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.06
 STREET FLOW TRAVEL TIME(MIN.) = 2.24 Tc(MIN.) = 5.94
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.248
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5900
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.591
 SUBAREA AREA(ACRES) = 1.15 SUBAREA RUNOFF(CFS) = 5.60
 TOTAL AREA(ACRES) = 1.3 PEAK FLOW RATE(CFS) = 6.39

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.18
 FLOW VELOCITY(FEET/SEC.) = 5.04 DEPTH*VELOCITY(FT*FT/SEC.) = 1.36
 LONGEST FLOWPATH FROM NODE 1978.40 TO NODE 1978.00 = 685.00 FEET.

FLOW PROCESS FROM NODE 1978.00 TO NODE 1978.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 5.94
 RAINFALL INTENSITY(INCH/HR) = 8.25
 TOTAL STREAM AREA(ACRES) = 1.31
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.39

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	36.69	7.82	6.911	8.43
2	6.39	5.94	8.248	1.31

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.13	5.94	8.248
2	42.04	7.82	6.911

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 42.04 Tc(MIN.) = 7.82

TOTAL AREA(ACRES) = 9.7

LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1978.00 = 1285.00 FEET.

FLOW PROCESS FROM NODE 1978.00 TO NODE 1977.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1179.00 DOWNSTREAM(FEET) = 1178.00

FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 11.46

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 42.04

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 7.91

LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1977.00 = 1345.00 FEET.

FLOW PROCESS FROM NODE 1977.00 TO NODE 1977.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

=====

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	42.04	7.91	6.862	9.74

LONGEST FLOWPATH FROM NODE 1989.00 TO NODE 1977.00 = 1345.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	53.23	10.27	5.796	12.58

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1977.00 = 2225.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	83.01	7.91	6.862
2	88.73	10.27	5.796

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 88.73 Tc(MIN.) = 10.27

TOTAL AREA(ACRES) = 22.3

FLOW PROCESS FROM NODE 1977.00 TO NODE 1977.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 1977.00 TO NODE 1976.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1178.00 DOWNSTREAM(FEET) = 1104.00

FLOW LENGTH(FEET) = 700.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.6 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 27.29
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 88.73
 PIPE TRAVEL TIME(MIN.) = 0.43 Tc(MIN.) = 10.70
 LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1976.00 = 2925.00 FEET.

FLOW PROCESS FROM NODE 1976.00 TO NODE 1976.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.70
 RAINFALL INTENSITY(INCH/HR) = 5.65
 TOTAL STREAM AREA(ACRES) = 22.32
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 88.73

FLOW PROCESS FROM NODE 1976.40 TO NODE 1976.20 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1186.00
 DOWNSTREAM ELEVATION(FEET) = 1180.00
 ELEVATION DIFFERENCE(FEET) = 6.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.810
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON TC = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 1.79
 TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 1.79

FLOW PROCESS FROM NODE 1976.20 TO NODE 1976.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1184.00 DOWNSTREAM ELEVATION(FEET) = 1115.00
 STREET LENGTH(FEET) = 780.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.37
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.33
 HALFSTREET FLOOD WIDTH(FEET) = 9.97
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.63
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 2.16
 STREET FLOW TRAVEL TIME(MIN.) = 1.96 Tc(MIN.) = 3.77
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

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NOTE: RAINFALL INTENSITY IS BASED ON $T_c = 5$ -MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.889

SUBAREA AREA(ACRES) = 1.36 SUBAREA RUNOFF(CFS) = 11.16

TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 12.95

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 12.59

FLOW VELOCITY(FEET/SEC.) = 7.60 DEPTH*VELOCITY(FT*FT/SEC.) = 2.87

LONGEST FLOWPATH FROM NODE 1976.40 TO NODE 1976.00 = 860.00 FEET.

FLOW PROCESS FROM NODE 1976.00 TO NODE 1976.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 3.77

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 1.58

PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.95

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T_c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	88.73	10.70	5.645	22.32
2	12.95	3.77	9.222	1.58

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T_c (MIN.)	INTENSITY (INCH/HOUR)
1	44.22	3.77	9.222
2	96.66	10.70	5.645

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 96.66 T_c (MIN.) = 10.70

TOTAL AREA(ACRES) = 23.9

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1976.00 = 2925.00 FEET.

FLOW PROCESS FROM NODE 1976.00 TO NODE 1975.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1109.00 DOWNSTREAM(FEET) = 1070.00

FLOW LENGTH(FEET) = 625.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 24.4 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 22.57

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 96.66

PIPE TRAVEL TIME(MIN.) = 0.46 T_c (MIN.) = 11.16

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1975.00 = 3550.00 FEET.

FLOW PROCESS FROM NODE 1975.00 TO NODE 1906.50 IS CODE = 51

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>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

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ELEVATION DATA: UPSTREAM(FEET) = 1070.00 DOWNSTREAM(FEET) = 1054.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 165.00 CHANNEL SLOPE = 0.0970
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.430
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 99.43
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 13.63
AVERAGE FLOW DEPTH(FEET) = 1.30 TRAVEL TIME(MIN.) = 0.20
Tc(MIN.) = 11.36
SUBAREA AREA(ACRES) = 4.08 SUBAREA RUNOFF(CFS) = 5.54
AREA-AVERAGE RUNOFF COEFFICIENT = 0.613
TOTAL AREA(ACRES) = 28.0 PEAK FLOW RATE(CFS) = 96.66

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 1.28 FLOW VELOCITY(FEET/SEC.) = 13.51
LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1906.50 = 3715.00 FEET.

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FLOW PROCESS FROM NODE 1906.50 TO NODE 1906.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1048.00 DOWNSTREAM(FEET) = 1047.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 26.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 19.24
ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 96.66
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 11.39
LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1906.00 = 3740.00 FEET.

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FLOW PROCESS FROM NODE 1906.00 TO NODE 1906.00 IS CODE = 10

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>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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*****
FLOW PROCESS FROM NODE 1968.00 TO NODE 1967.00 IS CODE = 21

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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1320.00
DOWNSTREAM ELEVATION(FEET) = 1315.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.196
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.705
SUBAREA RUNOFF(CFS) = 0.12
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.12

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FLOW PROCESS FROM NODE 1967.00 TO NODE 1964.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1315.00 DOWNSTREAM(FEET) = 1270.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 730.00 CHANNEL SLOPE = 0.0616
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.817
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2700
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.61
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.22
AVERAGE FLOW DEPTH(FEET) = 0.09 TRAVEL TIME(MIN.) = 5.49
Tc(MIN.) = 13.68
SUBAREA AREA(ACRES) = 0.74 SUBAREA RUNOFF(CFS) = 0.96
AREA-AVERAGE RUNOFF COEFFICIENT = 0.268
TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 1.05

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.12 FLOW VELOCITY(FEET/SEC.) = 2.76
LONGEST FLOWPATH FROM NODE 1968.00 TO NODE 1964.00 = 820.00 FEET.

FLOW PROCESS FROM NODE 1964.00 TO NODE 1963.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1262.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.60
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.05
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 13.74
LONGEST FLOWPATH FROM NODE 1968.00 TO NODE 1963.00 = 845.00 FEET.

FLOW PROCESS FROM NODE 1963.00 TO NODE 1963.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.74
RAINFALL INTENSITY(INCH/HR) = 4.81
TOTAL STREAM AREA(ACRES) = 0.81
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.05

FLOW PROCESS FROM NODE 1974.00 TO NODE 1973.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1310.00

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DOWNSTREAM ELEVATION(FEET) = 1305.00
 ELEVATION DIFFERENCE(FEET) = 5.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.212
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.017
 SUBAREA RUNOFF(CFS) = 0.53
 TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 1973.00 TO NODE 1972.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1305.00 DOWNSTREAM(FEET) = 1270.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 580.00 CHANNEL SLOPE = 0.0603
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.421
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2700
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.59
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.79
 AVERAGE FLOW DEPTH(FEET) = 0.20 TRAVEL TIME(MIN.) = 2.55
 Tc(MIN.) = 8.76
 SUBAREA AREA(ACRES) = 2.32 SUBAREA RUNOFF(CFS) = 4.02
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.276
 TOTAL AREA(ACRES) = 2.5 PEAK FLOW RATE(CFS) = 4.45

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.27 FLOW VELOCITY(FEET/SEC.) = 4.62
 LONGEST FLOWPATH FROM NODE 1974.00 TO NODE 1972.00 = 655.00 FEET.

FLOW PROCESS FROM NODE 1972.00 TO NODE 1963.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1262.00
 FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.51
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 4.45
 PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 8.88
 LONGEST FLOWPATH FROM NODE 1974.00 TO NODE 1963.00 = 715.00 FEET.

FLOW PROCESS FROM NODE 1963.00 TO NODE 1963.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.88
 RAINFALL INTENSITY(INCH/HR) = 6.37
 TOTAL STREAM AREA(ACRES) = 2.51
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.45

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	1.05	13.74	4.805	0.81
2	4.45	8.88	6.366	2.51

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.13	8.88	6.366
2	4.41	13.74	4.805

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 5.13 Tc(MIN.) = 8.88
TOTAL AREA(ACRES) = 3.3
LONGEST FLOWPATH FROM NODE 1968.00 TO NODE 1963.00 = 845.00 FEET.

FLOW PROCESS FROM NODE 1963.00 TO NODE 1963.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1262.00 DOWNSTREAM(FEET) = 1261.50
FLOW LENGTH(FEET) = 26.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.24
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.13
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 8.94
LONGEST FLOWPATH FROM NODE 1968.00 TO NODE 1963.50 = 871.00 FEET.

FLOW PROCESS FROM NODE 1963.50 TO NODE 1963.50 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 1971.00 TO NODE 1970.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1589.00
DOWNSTREAM ELEVATION(FEET) = 1558.00
ELEVATION DIFFERENCE(FEET) = 31.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 1.23
TOTAL AREA(ACRES) = 0.44 TOTAL RUNOFF(CFS) = 1.23

FLOW PROCESS FROM NODE 1970.00 TO NODE 1969.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1558.00 DOWNSTREAM(FEET) = 1326.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1020.00 CHANNEL SLOPE = 0.2275
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.688

```

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2700

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.81

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.67

AVERAGE FLOW DEPTH(FEET) = 0.26 TRAVEL TIME(MIN.) = 1.96

Tc(MIN.) = 8.23

SUBAREA AREA(ACRES) = 7.17 SUBAREA RUNOFF(CFS) = 12.95

AREA-AVERAGE RUNOFF COEFFICIENT = 0.275

TOTAL AREA(ACRES) = 7.6 PEAK FLOW RATE(CFS) = 13.98

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.36 FLOW VELOCITY(FEET/SEC.) = 10.39

LONGEST FLOWPATH FROM NODE 1971.00 TO NODE 1969.00 = 1120.00 FEET.

FLOW PROCESS FROM NODE 1969.00 TO NODE 1969.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 3

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 8.23

RAINFALL INTENSITY(INCH/HR) = 6.69

TOTAL STREAM AREA(ACRES) = 7.61

PEAK FLOW RATE(CFS) AT CONFLUENCE = 13.98

FLOW PROCESS FROM NODE 1951.00 TO NODE 1950.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1600.00

DOWNSTREAM ELEVATION(FEET) = 1529.00

ELEVATION DIFFERENCE(FEET) = 71.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

SUBAREA RUNOFF(CFS) = 0.39

TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.39

FLOW PROCESS FROM NODE 1950.00 TO NODE 1969.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1529.00 DOWNSTREAM(FEET) = 1272.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 900.00 CHANNEL SLOPE = 0.2856
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.803

```

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.19

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.59

AVERAGE FLOW DEPTH(FEET) = 0.21 TRAVEL TIME(MIN.) = 1.75

Tc(MIN.) = 8.01

SUBAREA AREA(ACRES) = 4.85 SUBAREA RUNOFF(CFS) = 11.55

AREA-AVERAGE RUNOFF COEFFICIENT = 0.350

TOTAL AREA(ACRES) = 5.0 PEAK FLOW RATE(CFS) = 11.88

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.31 FLOW VELOCITY(FEET/SEC.) = 10.67

LONGEST FLOWPATH FROM NODE 1951.00 TO NODE 1969.00 = 1000.00 FEET.

FLOW PROCESS FROM NODE 1969.00 TO NODE 1969.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 8.01

RAINFALL INTENSITY(INCH/HR) = 6.80

TOTAL STREAM AREA(ACRES) = 4.99

PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.88

FLOW PROCESS FROM NODE 1958.00 TO NODE 1957.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1435.00

DOWNSTREAM ELEVATION(FEET) = 1405.00

ELEVATION DIFFERENCE(FEET) = 30.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

SUBAREA RUNOFF(CFS) = 0.50

TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 1957.00 TO NODE 1956.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1405.00 DOWNSTREAM(FEET) = 1275.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1125.00 CHANNEL SLOPE = 0.1156

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.139

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.17

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.99

AVERAGE FLOW DEPTH(FEET) = 0.25 TRAVEL TIME(MIN.) = 3.13

Tc(MIN.) = 9.40

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 SUBAREA AREA(ACRES) = 4.29 SUBAREA RUNOFF(CFS) = 9.22
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
 TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 9.60

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.35 FLOW VELOCITY(FEET/SEC.) = 7.32
 LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1956.00 = 1225.00 FEET.

FLOW PROCESS FROM NODE 1956.00 TO NODE 1969.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1269.00	DOWNSTREAM(FEET) = 1264.00
FLOW LENGTH(FEET) = 165.00	MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000	
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.6 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.07	
ESTIMATED PIPE DIAMETER(INCH) = 18.00	NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 9.60	
PIPE TRAVEL TIME(MIN.) = 0.27	Tc(MIN.) = 9.67
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1969.00 = 1390.00 FEET.	

FLOW PROCESS FROM NODE 1969.00 TO NODE 1969.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
TIME OF CONCENTRATION(MIN.) = 9.67
RAINFALL INTENSITY(INCH/HR) = 6.03
TOTAL STREAM AREA(ACRES) = 4.47
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.60

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	13.98	8.23	6.688	7.61
2	11.88	8.01	6.803	4.99
3	9.60	9.67	6.027	4.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	33.45	8.01	6.803
2	33.83	8.23	6.688
3	32.72	9.67	6.027

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 33.83 Tc(MIN.) = 8.23
 TOTAL AREA(ACRES) = 17.1
 LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1969.00 = 1390.00 FEET.

FLOW PROCESS FROM NODE 1969.00 TO NODE 1963.50 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1264.00  DOWNSTREAM(FEET) = 1261.50
FLOW LENGTH(FEET) = 155.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.63
ESTIMATED PIPE DIAMETER(INCH) = 27.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 33.83
PIPE TRAVEL TIME(MIN.) = 0.24  Tc(MIN.) = 8.47
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1963.50 = 1545.00 FEET.

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*****
FLOW PROCESS FROM NODE 1963.50 TO NODE 1963.50 IS CODE = 11
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>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	33.83	8.47	6.563	17.07

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1963.50 = 1545.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.13	8.94	6.339	3.32

LONGEST FLOWPATH FROM NODE 1968.00 TO NODE 1963.50 = 871.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.69	8.47	6.563
2	37.80	8.94	6.339

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 38.69 Tc(MIN.) = 8.47
 TOTAL AREA(ACRES) = 20.4

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*****
FLOW PROCESS FROM NODE 1963.50 TO NODE 1963.50 IS CODE = 12
-----

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>>>>CLEAR MEMORY BANK # 2 <<<<

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*****
FLOW PROCESS FROM NODE 1963.00 TO NODE 1959.00 IS CODE = 31
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```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1261.50  DOWNSTREAM(FEET) = 1179.00
FLOW LENGTH(FEET) = 829.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.98
ESTIMATED PIPE DIAMETER(INCH) = 21.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 38.69
PIPE TRAVEL TIME(MIN.) = 0.63  Tc(MIN.) = 9.10
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1959.00 = 2374.00 FEET.

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*****
FLOW PROCESS FROM NODE 1959.00 TO NODE 1959.00 IS CODE = 1
-----

```

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.10
RAINFALL INTENSITY(INCH/HR) = 6.27
TOTAL STREAM AREA(ACRES) = 20.39
PEAK FLOW RATE(CFS) AT CONFLUENCE = 38.69
```

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*****
FLOW PROCESS FROM NODE 1962.00 TO NODE 1961.00 IS CODE = 21
-----
```

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

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=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .6300
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1250.00
DOWNSTREAM ELEVATION(FEET) = 1240.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.166
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.17
TOTAL AREA(ACRES) = 0.03 TOTAL RUNOFF(CFS) = 0.17
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*****
FLOW PROCESS FROM NODE 1961.00 TO NODE 1960.00 IS CODE = 51
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```
>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<
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```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1240.00 DOWNSTREAM(FEET) = 1190.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 490.00 CHANNEL SLOPE = 0.1020
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .6200
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.60
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.05
AVERAGE FLOW DEPTH(FEET) = 0.21 TRAVEL TIME(MIN.) = 1.62
Tc(MIN.) = 4.78
SUBAREA AREA(ACRES) = 1.20 SUBAREA RUNOFF(CFS) = 6.86
AREA-AVERAGE RUNOFF COEFFICIENT = 0.620
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 7.04
```

```
END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.31 FLOW VELOCITY(FEET/SEC.) = 6.32
LONGEST FLOWPATH FROM NODE 1962.00 TO NODE 1960.00 = 555.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 1960.00 TO NODE 1959.00 IS CODE = 31
-----
```

```
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
```

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1184.00 DOWNSTREAM(FEET) = 1179.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
```

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ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.41
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.04
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 4.81
LONGEST FLOWPATH FROM NODE 1962.00 TO NODE 1959.00 = 580.00 FEET.

FLOW PROCESS FROM NODE 1959.00 TO NODE 1959.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 4.81
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.23
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.04

FLOW PROCESS FROM NODE 1959.60 TO NODE 1959.40 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1370.00
DOWNSTREAM ELEVATION(FEET) = 1326.00
ELEVATION DIFFERENCE(FEET) = 44.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 0.59
TOTAL AREA(ACRES) = 0.21 TOTAL RUNOFF(CFS) = 0.59

FLOW PROCESS FROM NODE 1959.40 TO NODE 1959.20 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1326.00 DOWNSTREAM(FEET) = 1190.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1185.00 CHANNEL SLOPE = 0.1148
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.869
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.55
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.19
AVERAGE FLOW DEPTH(FEET) = 0.20 TRAVEL TIME(MIN.) = 3.81
Tc(MIN.) = 10.07
SUBAREA AREA(ACRES) = 2.83 SUBAREA RUNOFF(CFS) = 5.81
AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
TOTAL AREA(ACRES) = 3.0 PEAK FLOW RATE(CFS) = 6.24

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.28 FLOW VELOCITY(FEET/SEC.) = 6.33
LONGEST FLOWPATH FROM NODE 1959.60 TO NODE 1959.20 = 1285.00 FEET.

 FLOW PROCESS FROM NODE 1959.00 TO NODE 1959.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.07
 RAINFALL INTENSITY(INCH/HR) = 5.87
 TOTAL STREAM AREA(ACRES) = 3.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.24

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	38.69	9.10	6.267	20.39
2	7.04	4.81	9.222	1.23
3	6.24	10.07	5.869	3.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.45	4.81	9.222
2	49.11	9.10	6.267
3	46.95	10.07	5.869

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 49.11 Tc(MIN.) = 9.10
 TOTAL AREA(ACRES) = 24.7
 LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1959.00 = 2374.00 FEET.

 FLOW PROCESS FROM NODE 1959.00 TO NODE 1924.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1179.00 DOWNSTREAM(FEET) = 1176.00
 FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 17.55
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 49.11
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 9.16
 LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1924.00 = 2439.00 FEET.

 FLOW PROCESS FROM NODE 1924.00 TO NODE 1924.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

 FLOW PROCESS FROM NODE 1993.00 TO NODE 1992.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

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                                P-19
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 194.00
UPSTREAM ELEVATION(FEET) = 1276.00
DOWNSTREAM ELEVATION(FEET) = 1273.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 9.988
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
          THE MAXIMUM OVERLAND FLOW LENGTH = 73.20
          (Reference: Table 3-1B of Hydrology Manual)
          THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.902
SUBAREA RUNOFF(CFS) = 0.14
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.14

*****
FLOW PROCESS FROM NODE 1992.00 TO NODE 1933.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1273.00 DOWNSTREAM(FEET) = 1267.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 255.00 CHANNEL SLOPE = 0.0235
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.015
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.42
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.48
AVERAGE FLOW DEPTH(FEET) = 0.09 TRAVEL TIME(MIN.) = 2.87
Tc(MIN.) = 12.86
SUBAREA AREA(ACRES) = 0.31 SUBAREA RUNOFF(CFS) = 0.54
AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 0.67

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.12 FLOW VELOCITY(FEET/SEC.) = 1.73
LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1933.00 = 449.00 FEET.

*****
FLOW PROCESS FROM NODE 1933.00 TO NODE 1933.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.86
RAINFALL INTENSITY(INCH/HR) = 5.01
TOTAL STREAM AREA(ACRES) = 0.38
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.67

*****
FLOW PROCESS FROM NODE 1935.00 TO NODE 1934.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3300
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1235.00

```

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DOWNSTREAM ELEVATION(FEET) = 1234.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 10.296
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.787
SUBAREA RUNOFF(CFS) = 0.34
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.34

FLOW PROCESS FROM NODE 1934.00 TO NODE 1933.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1234.00 DOWNSTREAM(FEET) = 1233.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 165.00 CHANNEL SLOPE = 0.0061
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.048
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3300
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.68
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.13
AVERAGE FLOW DEPTH(FEET) = 0.18 TRAVEL TIME(MIN.) = 2.43
Tc(MIN.) = 12.73
SUBAREA AREA(ACRES) = 0.40 SUBAREA RUNOFF(CFS) = 0.67
AREA-AVERAGE RUNOFF COEFFICIENT = 0.330
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 0.97

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.22 FLOW VELOCITY(FEET/SEC.) = 1.29
LONGEST FLOWPATH FROM NODE 1935.00 TO NODE 1933.00 = 235.00 FEET.

FLOW PROCESS FROM NODE 1933.00 TO NODE 1933.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 12.73
RAINFALL INTENSITY(INCH/HR) = 5.05
TOTAL STREAM AREA(ACRES) = 0.58
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.97

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	0.67	12.86	5.015	0.38
2	0.97	12.73	5.048	0.58

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	1.63	12.73	5.048
2	1.63	12.86	5.015

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 1.63 Tc(MIN.) = 12.86

TOTAL AREA(ACRES) = 1.0
 LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1933.00 = 449.00 FEET.

FLOW PROCESS FROM NODE 1933.00 TO NODE 1932.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1227.00 DOWNSTREAM(FEET) = 1226.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.76
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.63
 PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 12.97
 LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1932.00 = 489.00 FEET.

FLOW PROCESS FROM NODE 1932.00 TO NODE 1925.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1226.00 DOWNSTREAM(FEET) = 1194.00
 FLOW LENGTH(FEET) = 490.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.07
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.63
 PIPE TRAVEL TIME(MIN.) = 1.01 Tc(MIN.) = 13.98
 LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1925.00 = 979.00 FEET.

FLOW PROCESS FROM NODE 1925.00 TO NODE 1925.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 1931.00 TO NODE 1930.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1280.00
 DOWNSTREAM ELEVATION(FEET) = 1258.00
 ELEVATION DIFFERENCE(FEET) = 22.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
 SUBAREA RUNOFF(CFS) = 0.73
 TOTAL AREA(ACRES) = 0.26 TOTAL RUNOFF(CFS) = 0.73

FLOW PROCESS FROM NODE 1930.00 TO NODE 1929.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1258.00 DOWNSTREAM(FEET) = 1214.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 200.00 CHANNEL SLOPE = 0.2200
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.611

```

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3100

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.73

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 7.14

AVERAGE FLOW DEPTH(FEET) = 0.20 TRAVEL TIME(MIN.) = 0.47

Tc(MIN.) = 6.73

SUBAREA AREA(ACRES) = 3.39 SUBAREA RUNOFF(CFS) = 8.00

AREA-AVERAGE RUNOFF COEFFICIENT = 0.313

TOTAL AREA(ACRES) = 3.7 PEAK FLOW RATE(CFS) = 8.69

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 FLOW VELOCITY(FEET/SEC.) = 8.81

LONGEST FLOWPATH FROM NODE 1931.00 TO NODE 1929.00 = 300.00 FEET.

FLOW PROCESS FROM NODE 1929.00 TO NODE 1926.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1208.00 DOWNSTREAM(FEET) = 1207.00
FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.39
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.69
PIPE TRAVEL TIME(MIN.) = 0.49 Tc(MIN.) = 7.23
LONGEST FLOWPATH FROM NODE 1931.00 TO NODE 1926.00 = 460.00 FEET.

```

FLOW PROCESS FROM NODE 1926.00 TO NODE 1926.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 7.23
RAINFALL INTENSITY(INCH/HR) = 7.27
TOTAL STREAM AREA(ACRES) = 3.65
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.69

```

FLOW PROCESS FROM NODE 1928.00 TO NODE 1927.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1223.00

DOWNSTREAM ELEVATION(FEET) = 1221.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.169

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.053

SUBAREA RUNOFF(CFS) = 0.51
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.51

FLOW PROCESS FROM NODE 1927.00 TO NODE 1926.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1221.00 DOWNSTREAM(FEET) = 1216.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 260.00 CHANNEL SLOPE = 0.0192
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.062

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5800
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.42
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.11
 AVERAGE FLOW DEPTH(FEET) = 0.38 TRAVEL TIME(MIN.) = 1.39
 Tc(MIN.) = 7.56
 SUBAREA AREA(ACRES) = 1.90 SUBAREA RUNOFF(CFS) = 7.78
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.580
 TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 8.23

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.54 FLOW VELOCITY(FEET/SEC.) = 3.76
 LONGEST FLOWPATH FROM NODE 1928.00 TO NODE 1926.00 = 340.00 FEET.

FLOW PROCESS FROM NODE 1926.00 TO NODE 1926.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.56
 RAINFALL INTENSITY(INCH/HR) = 7.06
 TOTAL STREAM AREA(ACRES) = 2.01
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.23

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.69	7.23	7.271	3.65
2	8.23	7.56	7.062	2.01

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.56	7.23	7.271
2	16.67	7.56	7.062

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.67 Tc(MIN.) = 7.56
 TOTAL AREA(ACRES) = 5.7
 LONGEST FLOWPATH FROM NODE 1931.00 TO NODE 1926.00 = 460.00 FEET.

FLOW PROCESS FROM NODE 1926.00 TO NODE 1925.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1210.00 DOWNSTREAM(FEET) = 1196.00
 FLOW LENGTH(FEET) = 195.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.94
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 16.67
 PIPE TRAVEL TIME(MIN.) = 0.20 Tc(MIN.) = 7.77
 LONGEST FLOWPATH FROM NODE 1931.00 TO NODE 1925.00 = 655.00 FEET.

FLOW PROCESS FROM NODE 1925.00 TO NODE 1925.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.67	7.77	6.942	5.66

LONGEST FLOWPATH FROM NODE 1931.00 TO NODE 1925.00 = 655.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	1.63	13.98	4.750	0.96

LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1925.00 = 979.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	17.58	7.77	6.942
2	13.04	13.98	4.750

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 17.58 Tc(MIN.) = 7.77
 TOTAL AREA(ACRES) = 6.6

FLOW PROCESS FROM NODE 1925.00 TO NODE 1925.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 1925.00 TO NODE 1924.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1196.00 DOWNSTREAM(FEET) = 1178.00
 FLOW LENGTH(FEET) = 285.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.34
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 17.58
 PIPE TRAVEL TIME(MIN.) = 0.31 Tc(MIN.) = 8.08
 LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1924.00 = 1264.00 FEET.

 FLOW PROCESS FROM NODE 1924.00 TO NODE 1924.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
 =====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	17.58	8.08	6.769	6.62

LONGEST FLOWPATH FROM NODE 1993.00 TO NODE 1924.00 = 1264.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	49.11	9.16	6.240	24.66

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1924.00 = 2439.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	60.87	8.08	6.769
2	65.31	9.16	6.240

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 65.31 Tc(MIN.) = 9.16
 TOTAL AREA(ACRES) = 31.3

 FLOW PROCESS FROM NODE 1924.00 TO NODE 1924.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 1924.00 TO NODE 1912.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 1178.00 DOWNSTREAM(Feet) = 1087.40
 FLOW LENGTH(Feet) = 690.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.8 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 27.73
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 65.31
 PIPE TRAVEL TIME(MIN.) = 0.41 Tc(MIN.) = 9.58
 LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1912.00 = 3129.00 FEET.

 FLOW PROCESS FROM NODE 1912.00 TO NODE 1912.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 1921.50 TO NODE 1921.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1201.00
DOWNSTREAM ELEVATION(FEET) = 1200.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 10.685
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.650
SUBAREA RUNOFF(CFS) = 0.11
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.11

*****
FLOW PROCESS FROM NODE 1921.00 TO NODE 1920.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1200.00 DOWNSTREAM(FEET) = 1195.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 475.00 CHANNEL SLOPE = 0.0105
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.185
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.55
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.25
AVERAGE FLOW DEPTH(FEET) = 0.13 TRAVEL TIME(MIN.) = 6.33
Tc(MIN.) = 17.02
SUBAREA AREA(ACRES) = 0.82 SUBAREA RUNOFF(CFS) = 0.86
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 0.94

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.19 FLOW VELOCITY(FEET/SEC.) = 1.50
LONGEST FLOWPATH FROM NODE 1921.50 TO NODE 1920.00 = 540.00 FEET.

*****
FLOW PROCESS FROM NODE 1920.00 TO NODE 1917.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1189.00 DOWNSTREAM(FEET) = 1183.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 1.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.81
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 0.94
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 17.06
LONGEST FLOWPATH FROM NODE 1921.50 TO NODE 1917.00 = 565.00 FEET.

*****
FLOW PROCESS FROM NODE 1917.00 TO NODE 1917.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 17.06
RAINFALL INTENSITY(INCH/HR) = 4.18
TOTAL STREAM AREA(ACRES) = 0.90
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.94

```

 FLOW PROCESS FROM NODE 1919.00 TO NODE 1918.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5800
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1200.00
 DOWNSTREAM ELEVATION(FEET) = 1198.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.169
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.053
 SUBAREA RUNOFF(CFS) = 0.51
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.51

 FLOW PROCESS FROM NODE 1918.00 TO NODE 1917.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1198.00 DOWNSTREAM ELEVATION(FEET) = 1189.00
 STREET LENGTH(FEET) = 545.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.37
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.31
 HALFSTREET FLOOD WIDTH(FEET) = 9.24
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.77
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86
 STREET FLOW TRAVEL TIME(MIN.) = 3.28 Tc(MIN.) = 9.45
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.116

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.580
 SUBAREA AREA(ACRES) = 2.71 SUBAREA RUNOFF(CFS) = 9.61
 TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 10.00

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 12.03
 FLOW VELOCITY(FEET/SEC.) = 3.19 DEPTH*VELOCITY(FT*FT/SEC.) = 1.17
 LONGEST FLOWPATH FROM NODE 1919.00 TO NODE 1917.00 = 625.00 FEET.

 FLOW PROCESS FROM NODE 1917.00 TO NODE 1917.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 9.45
 RAINFALL INTENSITY(INCH/HR) = 6.12
 TOTAL STREAM AREA(ACRES) = 2.82
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.00

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	0.94	17.06	4.179	0.90
2	10.00	9.45	6.116	2.82

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.52	9.45	6.116
2	7.78	17.06	4.179

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.52 Tc(MIN.) = 9.45
 TOTAL AREA(ACRES) = 3.7
 LONGEST FLOWPATH FROM NODE 1919.00 TO NODE 1917.00 = 625.00 FEET.

FLOW PROCESS FROM NODE 1917.00 TO NODE 1914.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1189.00 DOWNSTREAM(FEET) = 1173.00
 FLOW LENGTH(FEET) = 215.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.40
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.52
 PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 9.70
 LONGEST FLOWPATH FROM NODE 1919.00 TO NODE 1914.00 = 840.00 FEET.

FLOW PROCESS FROM NODE 1914.00 TO NODE 1914.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.70
 RAINFALL INTENSITY(INCH/HR) = 6.01
 TOTAL STREAM AREA(ACRES) = 3.72
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.52

FLOW PROCESS FROM NODE 1916.00 TO NODE 1915.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5800
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

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UPSTREAM ELEVATION(FEET) = 1193.00
DOWNSTREAM ELEVATION(FEET) = 1189.00
ELEVATION DIFFERENCE(FEET) = 4.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.650
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.523
SUBAREA RUNOFF(CFS) = 1.14
TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 1.14

FLOW PROCESS FROM NODE 1915.00 TO NODE 1914.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1189.00 DOWNSTREAM ELEVATION(FEET) = 1179.00
STREET LENGTH(FEET) = 780.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.58
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.34
HALFSTREET FLOOD WIDTH(FEET) = 10.66
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.62
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.89
STREET FLOW TRAVEL TIME(MIN.) = 4.96 Tc(MIN.) = 10.61
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.677
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.580
SUBAREA AREA(ACRES) = 3.23 SUBAREA RUNOFF(CFS) = 10.64
TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 11.39

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.34
FLOW VELOCITY(FEET/SEC.) = 3.00 DEPTH*VELOCITY(FT*FT/SEC.) = 1.18
LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1914.00 = 875.00 FEET.

FLOW PROCESS FROM NODE 1914.00 TO NODE 1914.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.61
RAINFALL INTENSITY(INCH/HR) = 5.68
TOTAL STREAM AREA(ACRES) = 3.46
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.39

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

			P-19	
1	10.52	9.70	6.014	3.72
2	11.39	10.61	5.677	3.46

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.94	9.70	6.014
2	21.33	10.61	5.677

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.33 Tc(MIN.) = 10.61
TOTAL AREA(ACRES) = 7.2
LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1914.00 = 875.00 FEET.

FLOW PROCESS FROM NODE 1914.00 TO NODE 1913.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1173.00 DOWNSTREAM(FEET) = 1089.00
FLOW LENGTH(FEET) = 130.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 38.35
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 21.33
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.66
LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1913.00 = 1005.00 FEET.

FLOW PROCESS FROM NODE 1913.00 TO NODE 1913.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.66
RAINFALL INTENSITY(INCH/HR) = 5.66
TOTAL STREAM AREA(ACRES) = 7.18
PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.33

FLOW PROCESS FROM NODE 1923.00 TO NODE 1922.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1180.00
DOWNSTREAM ELEVATION(FEET) = 1168.00
ELEVATION DIFFERENCE(FEET) = 12.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.738
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.608
SUBAREA RUNOFF(CFS) = 0.11
TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.11

 FLOW PROCESS FROM NODE 1922.00 TO NODE 1913.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1168.00 DOWNSTREAM(FEET) = 1095.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 675.00 CHANNEL SLOPE = 0.1081
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.539

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.59

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.63

AVERAGE FLOW DEPTH(FEET) = 0.07 TRAVEL TIME(MIN.) = 4.28

Tc(MIN.) = 11.02

SUBAREA AREA(ACRES) = 0.67 SUBAREA RUNOFF(CFS) = 0.93

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 1.01

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.10 FLOW VELOCITY(FEET/SEC.) = 3.29

LONGEST FLOWPATH FROM NODE 1923.00 TO NODE 1913.00 = 765.00 FEET.

 FLOW PROCESS FROM NODE 1913.00 TO NODE 1913.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.02
 RAINFALL INTENSITY(INCH/HR) = 5.54
 TOTAL STREAM AREA(ACRES) = 0.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.01

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.33	10.66	5.658	7.18
2	1.01	11.02	5.539	0.73

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.31	10.66	5.658
2	21.89	11.02	5.539

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.31 Tc(MIN.) = 10.66

TOTAL AREA(ACRES) = 7.9

LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1913.00 = 1005.00 FEET.

 FLOW PROCESS FROM NODE 1913.00 TO NODE 1912.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1089.00  DOWNSTREAM(FEET) = 1087.40
FLOW LENGTH(FEET) = 160.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.13
ESTIMATED PIPE DIAMETER(INCH) = 27.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 22.31
PIPE TRAVEL TIME(MIN.) = 0.33  Tc(MIN.) = 10.99
LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1912.00 = 1165.00 FEET.

```

```

*****
FLOW PROCESS FROM NODE 1912.00 TO NODE 1912.00 IS CODE = 11
-----

```

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.31	10.99	5.548	7.91

LONGEST FLOWPATH FROM NODE 1916.00 TO NODE 1912.00 = 1165.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	65.31	9.58	6.064	31.28

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1912.00 = 3129.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	84.75	9.58	6.064
2	82.06	10.99	5.548

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 84.75 Tc(MIN.) = 9.58
 TOTAL AREA(ACRES) = 39.2

```

*****
FLOW PROCESS FROM NODE 1912.00 TO NODE 1912.00 IS CODE = 12
-----

```

>>>>CLEAR MEMORY BANK # 2 <<<<

```

*****
FLOW PROCESS FROM NODE 1912.00 TO NODE 1911.00 IS CODE = 31
-----

```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1087.40  DOWNSTREAM(FEET) = 1079.00
FLOW LENGTH(FEET) = 220.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 23.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.58
ESTIMATED PIPE DIAMETER(INCH) = 33.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 84.75
PIPE TRAVEL TIME(MIN.) = 0.20  Tc(MIN.) = 9.77
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1911.00 = 3349.00 FEET.

```

```

*****
FLOW PROCESS FROM NODE 1911.00 TO NODE 1911.00 IS CODE = 1
-----

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.77
RAINFALL INTENSITY(INCH/HR) = 5.99
TOTAL STREAM AREA(ACRES) = 39.19
PEAK FLOW RATE(CFS) AT CONFLUENCE = 84.75
```

```
*****
FLOW PROCESS FROM NODE 1911.40 TO NODE 1911.20 IS CODE = 21
-----
```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1150.00
DOWNSTREAM ELEVATION(FEET) = 1140.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.593
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.579
SUBAREA RUNOFF(CFS) = 0.21
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.21
```

```
*****
FLOW PROCESS FROM NODE 1911.20 TO NODE 1911.00 IS CODE = 51
-----
```

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1140.00 DOWNSTREAM(FEET) = 1085.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 250.00 CHANNEL SLOPE = 0.2200
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.591
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.71
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.57
AVERAGE FLOW DEPTH(FEET) = 0.06 TRAVEL TIME(MIN.) = 1.17
Tc(MIN.) = 6.76
SUBAREA AREA(ACRES) = 0.53 SUBAREA RUNOFF(CFS) = 1.01
AREA-AVERAGE RUNOFF COEFFICIENT = 0.257
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 1.19
```

```
END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.09 FLOW VELOCITY(FEET/SEC.) = 4.31
LONGEST FLOWPATH FROM NODE 1911.40 TO NODE 1911.00 = 320.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 1911.00 TO NODE 1911.00 IS CODE = 1
-----
```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.76
RAINFALL INTENSITY(INCH/HR) = 7.59
```

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TOTAL STREAM AREA(ACRES) = 0.61
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.19

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	84.75	9.77	5.985	39.19
2	1.19	6.76	7.591	0.61

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	59.81	6.76	7.591
2	85.68	9.77	5.985

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 85.68 Tc(MIN.) = 9.77
TOTAL AREA(ACRES) = 39.8
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1911.00 = 3349.00 FEET.

FLOW PROCESS FROM NODE 1911.00 TO NODE 1907.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1079.00 DOWNSTREAM(FEET) = 1069.30
FLOW LENGTH(FEET) = 585.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 39.0 INCH PIPE IS 27.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.65
ESTIMATED PIPE DIAMETER(INCH) = 39.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 85.68
PIPE TRAVEL TIME(MIN.) = 0.71 Tc(MIN.) = 10.49
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1907.00 = 3934.00 FEET.

FLOW PROCESS FROM NODE 1907.00 TO NODE 1907.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.49
RAINFALL INTENSITY(INCH/HR) = 5.72
TOTAL STREAM AREA(ACRES) = 39.80
PEAK FLOW RATE(CFS) AT CONFLUENCE = 85.68

FLOW PROCESS FROM NODE 1910.00 TO NODE 1909.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 60.00
UPSTREAM ELEVATION(FEET) = 1090.00
DOWNSTREAM ELEVATION(FEET) = 1079.40
ELEVATION DIFFERENCE(FEET) = 10.60
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.366

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WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.48

TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.48

FLOW PROCESS FROM NODE 1909.00 TO NODE 1908.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1079.40 DOWNSTREAM(FEET) = 1075.80

CHANNEL LENGTH THRU SUBAREA(FEET) = 360.00 CHANNEL SLOPE = 0.0100

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .6100

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 17.32

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.69

AVERAGE FLOW DEPTH(FEET) = 0.96 TRAVEL TIME(MIN.) = 1.63

Tc(MIN.) = 4.99

SUBAREA AREA(ACRES) = 6.00 SUBAREA RUNOFF(CFS) = 33.75

AREA-AVERAGE RUNOFF COEFFICIENT = 0.610

TOTAL AREA(ACRES) = 6.1 PEAK FLOW RATE(CFS) = 34.23

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.35 FLOW VELOCITY(FEET/SEC.) = 4.46

LONGEST FLOWPATH FROM NODE 1910.00 TO NODE 1908.00 = 420.00 FEET.

FLOW PROCESS FROM NODE 1908.00 TO NODE 1907.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1070.00 DOWNSTREAM(FEET) = 1069.30

FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 8.94

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 34.23

PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 5.12

LONGEST FLOWPATH FROM NODE 1910.00 TO NODE 1907.00 = 490.00 FEET.

FLOW PROCESS FROM NODE 1907.00 TO NODE 1907.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 5.12

RAINFALL INTENSITY(INCH/HR) = 9.08

TOTAL STREAM AREA(ACRES) = 6.09

PEAK FLOW RATE(CFS) AT CONFLUENCE = 34.23

** CONFLUENCE DATA **

STREAM RUNOFF Tc INTENSITY AREA

			P-19	
NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	85.68	10.49	5.719	39.80
2	34.23	5.12	9.077	6.09

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	88.21	5.12	9.077
2	107.25	10.49	5.719

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 107.25 Tc(MIN.) = 10.49

TOTAL AREA(ACRES) = 45.9

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1907.00 = 3934.00 FEET.

FLOW PROCESS FROM NODE 1907.00 TO NODE 1906.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1069.30 DOWNSTREAM(FEET) = 1063.70

FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 23.1 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 26.45

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 107.25

PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 10.53

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1906.00 = 3999.00 FEET.

FLOW PROCESS FROM NODE 1906.00 TO NODE 1906.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	107.25	10.53	5.704	45.89

LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1906.00 = 3999.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	96.66	11.39	5.424	27.98

LONGEST FLOWPATH FROM NODE 2025.00 TO NODE 1906.00 = 3740.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	196.64	10.53	5.704
2	198.63	11.39	5.424

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 198.63 Tc(MIN.) = 11.39

TOTAL AREA(ACRES) = 73.9

FLOW PROCESS FROM NODE 1906.00 TO NODE 1906.00 IS CODE = 12

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>>>>>CLEAR MEMORY BANK # 1 <<<<<
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FLOW PROCESS FROM NODE 1906.00 TO NODE 1905.00 IS CODE = 31
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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

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>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 1063.70 DOWNSTREAM(FEET) = 1010.00
FLOW LENGTH(FEET) = 115.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 21.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 57.56
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 198.63
PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 11.42
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1905.00 = 4114.00 FEET.

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FLOW PROCESS FROM NODE 1905.00 TO NODE 1901.00 IS CODE = 51
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>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

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>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 1010.00 DOWNSTREAM(FEET) = 950.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 815.00 CHANNEL SLOPE = 0.0736
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.154
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3200
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 216.01
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 15.05
AVERAGE FLOW DEPTH(FEET) = 2.03 TRAVEL TIME(MIN.) = 0.90
Tc(MIN.) = 12.32
SUBAREA AREA(ACRES) = 21.06 SUBAREA RUNOFF(CFS) = 34.74
AREA-AVERAGE RUNOFF COEFFICIENT = 0.449
TOTAL AREA(ACRES) = 94.9 PEAK FLOW RATE(CFS) = 219.49

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:

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DEPTH(FEET) = 2.05 FLOW VELOCITY(FEET/SEC.) = 15.11
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 1901.00 = 4929.00 FEET.

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FLOW PROCESS FROM NODE 1901.00 TO NODE 19.00 IS CODE = 41
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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

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>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 950.00 DOWNSTREAM(FEET) = 930.00
FLOW LENGTH(FEET) = 441.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 60.0 INCH PIPE IS 27.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 25.58
GIVEN PIPE DIAMETER(INCH) = 60.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 219.49
PIPE TRAVEL TIME(MIN.) = 0.29 Tc(MIN.) = 12.61
LONGEST FLOWPATH FROM NODE 1958.00 TO NODE 19.00 = 5370.00 FEET.

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END OF STUDY SUMMARY:

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TOTAL AREA(ACRES) = 94.9 TC(MIN.) = 12.61
PEAK FLOW RATE(CFS) = 219.49

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END OF RATIONAL METHOD ANALYSIS

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Detention 1906

Node to Node		Code	C Factor	Area (ac.)	C x A
2025	2024	2	0.63	0.14	0.09
2024	2023	5	0.63	9.04	5.70
2022	2021	2	0.63	0.06	0.04
2021	2020	6	0.63	0.39	0.25
2019	2018	2	0.88	0.14	0.12
2018	2017	6	0.89	0.95	0.85
2016	2015	2	0.9	0.17	0.15
2015	2014	6	0.9	1.69	1.52
1989	1988	2	0.63	0.09	0.06
1988	1987	6	0.63	0.65	0.41
1986	1985	2	0.59	0.10	0.06
1985	1984	5	0.58	1.17	0.68
1982	1981	2	0.63	0.14	0.09
1981	1980	5	0.63	6.28	3.96
1978.4	1978.2	2	0.6	0.16	0.10
1978.2	1978	6	0.59	1.15	0.68
1976.4	1976.2	2	0.88	0.22	0.19
1976.2	1976	6	0.89	1.36	1.21
			Total	23.90	16.14
			Avg C	0.675	

Detention 1906, Northern edge of Town Center

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 11 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 73.9 ACRES

RUNOFF COEFFICIENT 0.68

PEAK DISCHARGE 198.63 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 11 DISCHARGE (CFS) = 10.5

TIME (MIN) = 22 DISCHARGE (CFS) = 10.7

TIME (MIN) = 33 DISCHARGE (CFS) = 11.2

TIME (MIN) = 44 DISCHARGE (CFS) = 11.4

TIME (MIN) = 55 DISCHARGE (CFS) = 11.9

TIME (MIN) = 66 DISCHARGE (CFS) = 12.2

TIME (MIN) = 77 DISCHARGE (CFS) = 12.9

TIME (MIN) = 88 DISCHARGE (CFS) = 13.3

TIME (MIN) = 99 DISCHARGE (CFS) = 14.1

TIME (MIN) = 110 DISCHARGE (CFS) = 14.6

TIME (MIN) = 121 DISCHARGE (CFS) = 15.6

TIME (MIN) = 132 DISCHARGE (CFS) = 16.2

TIME (MIN) = 143 DISCHARGE (CFS) = 17.6

TIME (MIN) = 154 DISCHARGE (CFS) = 18.5

TIME (MIN) = 165 DISCHARGE (CFS) = 20.5

TIME (MIN) = 176 DISCHARGE (CFS) = 21.7

TIME (MIN) = 187 DISCHARGE (CFS) = 24.9
TIME (MIN) = 198 DISCHARGE (CFS) = 27
TIME (MIN) = 209 DISCHARGE (CFS) = 33
TIME (MIN) = 220 DISCHARGE (CFS) = 37.6
TIME (MIN) = 231 DISCHARGE (CFS) = 55.2
TIME (MIN) = 242 DISCHARGE (CFS) = 157.8
TIME (MIN) = 253 DISCHARGE (CFS) = 198.63
TIME (MIN) = 264 DISCHARGE (CFS) = 44.3
TIME (MIN) = 275 DISCHARGE (CFS) = 29.6
TIME (MIN) = 286 DISCHARGE (CFS) = 23.2
TIME (MIN) = 297 DISCHARGE (CFS) = 19.4
TIME (MIN) = 308 DISCHARGE (CFS) = 16.9
TIME (MIN) = 319 DISCHARGE (CFS) = 15.1
TIME (MIN) = 330 DISCHARGE (CFS) = 13.7
TIME (MIN) = 341 DISCHARGE (CFS) = 12.6
TIME (MIN) = 352 DISCHARGE (CFS) = 11.7
TIME (MIN) = 363 DISCHARGE (CFS) = 10.9
TIME (MIN) = 374 DISCHARGE (CFS) = 0

Detention Basin 1906 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 198.63 cfs

Time of Concentration= 11 minutes

HEC-HMS Time Interval Used= 1 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0.0		0.0
1		1.0	1.0
2		1.9	1.9
3		2.9	2.9
4		3.8	3.8
5		4.8	4.8
6		5.7	5.7
7		6.7	6.7
8		7.6	7.6
9		8.6	8.6
10		9.5	9.5
11	10.5		10.5
12		10.5	10.5
13		10.5	10.5
14		10.6	10.6
15		10.6	10.6
16		10.6	10.6
17		10.6	10.6
18		10.6	10.6
19		10.6	10.6
20		10.7	10.7
21		10.7	10.7
22	10.7		10.7
23		10.7	10.7
24		10.8	10.8
25		10.8	10.8
26		10.9	10.9
27		10.9	10.9
28		11.0	11.0
29		11.0	11.0
30		11.1	11.1
31		11.1	11.1
32		11.2	11.2
33	11.2		11.2
34		11.2	11.2
35		11.2	11.2
36		11.3	11.3
37		11.3	11.3
38		11.3	11.3

39		11.3	11.3
40		11.3	11.3
41		11.3	11.3
42		11.4	11.4
43		11.4	11.4
44	11.4		11.4
45		11.4	11.4
46		11.5	11.5
47		11.5	11.5
48		11.6	11.6
49		11.6	11.6
50		11.7	11.7
51		11.7	11.7
52		11.8	11.8
53		11.8	11.8
54		11.9	11.9
55	11.9		11.9
56		11.9	11.9
57		12.0	12.0
58		12.0	12.0
59		12.0	12.0
60		12.0	12.0
61		12.1	12.1
62		12.1	12.1
63		12.1	12.1
64		12.1	12.1
65		12.2	12.2
66	12.2		12.2
67		12.3	12.3
68		12.3	12.3
69		12.4	12.4
70		12.5	12.5
71		12.5	12.5
72		12.6	12.6
73		12.6	12.6
74		12.7	12.7
75		12.8	12.8
76		12.8	12.8
77	12.9		12.9
78		12.9	12.9
79		13.0	13.0
80		13.0	13.0
81		13.0	13.0
82		13.1	13.1
83		13.1	13.1
84		13.2	13.2
85		13.2	13.2
86		13.2	13.2

87		13.3	13.3
88	13.3		13.3
89		13.4	13.4
90		13.4	13.4
91		13.5	13.5
92		13.6	13.6
93		13.7	13.7
94		13.7	13.7
95		13.8	13.8
96		13.9	13.9
97		14.0	14.0
98		14.0	14.0
99	14.1		14.1
100		14.1	14.1
101		14.2	14.2
102		14.2	14.2
103		14.3	14.3
104		14.3	14.3
105		14.4	14.4
106		14.4	14.4
107		14.5	14.5
108		14.5	14.5
109		14.6	14.6
110	14.6		14.6
111		14.7	14.7
112		14.8	14.8
113		14.9	14.9
114		15.0	15.0
115		15.1	15.1
116		15.1	15.1
117		15.2	15.2
118		15.3	15.3
119		15.4	15.4
120		15.5	15.5
121	15.6		15.6
122		15.7	15.7
123		15.7	15.7
124		15.8	15.8
125		15.8	15.8
126		15.9	15.9
127		15.9	15.9
128		16.0	16.0
129		16.0	16.0
130		16.1	16.1
131		16.1	16.1
132	16.2		16.2
133		16.3	16.3
134		16.5	16.5

135		16.6	16.6
136		16.7	16.7
137		16.8	16.8
138		17.0	17.0
139		17.1	17.1
140		17.2	17.2
141		17.3	17.3
142		17.5	17.5
143	17.6		17.6
144		17.7	17.7
145		17.8	17.8
146		17.8	17.8
147		17.9	17.9
148		18.0	18.0
149		18.1	18.1
150		18.2	18.2
151		18.3	18.3
152		18.3	18.3
153		18.4	18.4
154	18.5		18.5
155		18.7	18.7
156		18.9	18.9
157		19.0	19.0
158		19.2	19.2
159		19.4	19.4
160		19.6	19.6
161		19.8	19.8
162		20.0	20.0
163		20.1	20.1
164		20.3	20.3
165	20.5		20.5
166		20.6	20.6
167		20.7	20.7
168		20.8	20.8
169		20.9	20.9
170		21.0	21.0
171		21.2	21.2
172		21.3	21.3
173		21.4	21.4
174		21.5	21.5
175		21.6	21.6
176	21.7		21.7
177		22.0	22.0
178		22.3	22.3
179		22.6	22.6
180		22.9	22.9
181		23.2	23.2
182		23.4	23.4

183		23.7	23.7
184		24.0	24.0
185		24.3	24.3
186		24.6	24.6
187	24.9		24.9
188		25.1	25.1
189		25.3	25.3
190		25.5	25.5
191		25.7	25.7
192		25.9	25.9
193		26.0	26.0
194		26.2	26.2
195		26.4	26.4
196		26.6	26.6
197		26.8	26.8
198	27.0		27.0
199		27.5	27.5
200		28.1	28.1
201		28.6	28.6
202		29.2	29.2
203		29.7	29.7
204		30.3	30.3
205		30.8	30.8
206		31.4	31.4
207		31.9	31.9
208		32.5	32.5
209	33.0		33.0
210		33.4	33.4
211		33.8	33.8
212		34.3	34.3
213		34.7	34.7
214		35.1	35.1
215		35.5	35.5
216		35.9	35.9
217		36.3	36.3
218		36.8	36.8
219		37.2	37.2
220	37.6		37.6
221		39.2	39.2
222		40.8	40.8
223		42.4	42.4
224		44.0	44.0
225		45.6	45.6
226		47.2	47.2
227		48.8	48.8
228		50.4	50.4
229		52.0	52.0
230		53.6	53.6

231	55.2		55.2
232		64.5	64.5
233		73.9	73.9
234		83.2	83.2
235		92.5	92.5
236		101.8	101.8
237		111.2	111.2
238		120.5	120.5
239		129.8	129.8
240		139.1	139.1
241		148.5	148.5
242	157.8		157.8
243		161.5	161.5
244		165.2	165.2
245		168.9	168.9
246		172.6	172.6
247		176.4	176.4
248		180.1	180.1
249		183.8	183.8
250		187.5	187.5
251		191.2	191.2
252		194.9	194.9
253	198.6		198.6
254		184.6	184.6
255		170.6	170.6
256		156.5	156.5
257		142.5	142.5
258		128.5	128.5
259		114.5	114.5
260		100.4	100.4
261		86.4	86.4
262		72.4	72.4
263		58.3	58.3
264	44.3		44.3
265		43.0	43.0
266		41.6	41.6
267		40.3	40.3
268		39.0	39.0
269		37.6	37.6
270		36.3	36.3
271		34.9	34.9
272		33.6	33.6
273		32.3	32.3
274		30.9	30.9
275	29.6		29.6
276		29.0	29.0
277		28.4	28.4
278		27.9	27.9

279		27.3	27.3
280		26.7	26.7
281		26.1	26.1
282		25.5	25.5
283		24.9	24.9
284		24.4	24.4
285		23.8	23.8
286	23.2		23.2
287		22.9	22.9
288		22.5	22.5
289		22.2	22.2
290		21.8	21.8
291		21.5	21.5
292		21.1	21.1
293		20.8	20.8
294		20.4	20.4
295		20.1	20.1
296		19.7	19.7
297	19.4		19.4
298		19.2	19.2
299		18.9	18.9
300		18.7	18.7
301		18.5	18.5
302		18.3	18.3
303		18.0	18.0
304		17.8	17.8
305		17.6	17.6
306		17.4	17.4
307		17.1	17.1
308	16.9		16.9
309		16.7	16.7
310		16.6	16.6
311		16.4	16.4
312		16.2	16.2
313		16.1	16.1
314		15.9	15.9
315		15.8	15.8
316		15.6	15.6
317		15.4	15.4
318		15.3	15.3
319	15.1		15.1
320		15.0	15.0
321		14.8	14.8
322		14.7	14.7
323		14.6	14.6
324		14.5	14.5
325		14.3	14.3
326		14.2	14.2

327		14.1	14.1
328		14.0	14.0
329		13.8	13.8
330	13.7		13.7
331		13.6	13.6
332		13.5	13.5
333		13.4	13.4
334		13.3	13.3
335		13.2	13.2
336		13.1	13.1
337		13.0	13.0
338		12.9	12.9
339		12.8	12.8
340		12.7	12.7
341	12.6		12.6
342		12.5	12.5
343		12.4	12.4
344		12.4	12.4
345		12.3	12.3
346		12.2	12.2
347		12.1	12.1
348		12.0	12.0
349		11.9	11.9
350		11.9	11.9
351		11.8	11.8
352	11.7		11.7
353		11.6	11.6
354		11.6	11.6
355		11.5	11.5
356		11.4	11.4
357		11.3	11.3
358		11.3	11.3
359		11.2	11.2
360		11.1	11.1
361		11.0	11.0
362		11.0	11.0
363	10.9		10.9
364		9.9	9.9
365		8.9	8.9
366		7.9	7.9
367		6.9	6.9
368		5.9	5.9
369		5.0	5.0
370		4.0	4.0
371		3.0	3.0
372		2.0	2.0
373		1.0	1.0
374	0.0		0.0

Detention 1906 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree view of the project components. The 'Basin Models' folder is expanded, showing 'Basin 19' which contains 'Basin Inflow', 'Discharge Gage', 'Detention Basin 1906', and 'Outlets'. The 'Outlets' folder is further expanded, showing 'Outlet 1'. Below the tree view are tabs for 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a 'Source' icon and tabs for 'Inflow' and 'Options'. The 'Inflow' tab is selected, displaying the configuration for 'Basin Inflow'.

Basin Name: Basin 19
Element Name: Basin Inflow

Description: Node 1901
Downstream: Detention Basin 1906
Area (MI²): 0.127
Flow Method: Discharge Gage

Detention 1906 Pr

Basin Models

Basin 19

Basin Inflow

Detention Basin 1906

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Time-Series Data

Discharge Gages

Node 1906 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:14

Paired Data

Elevation-Storage Functions

Basin 1906 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 19

Element Name: Detention Basin 1906

Method: Orifice Outlet

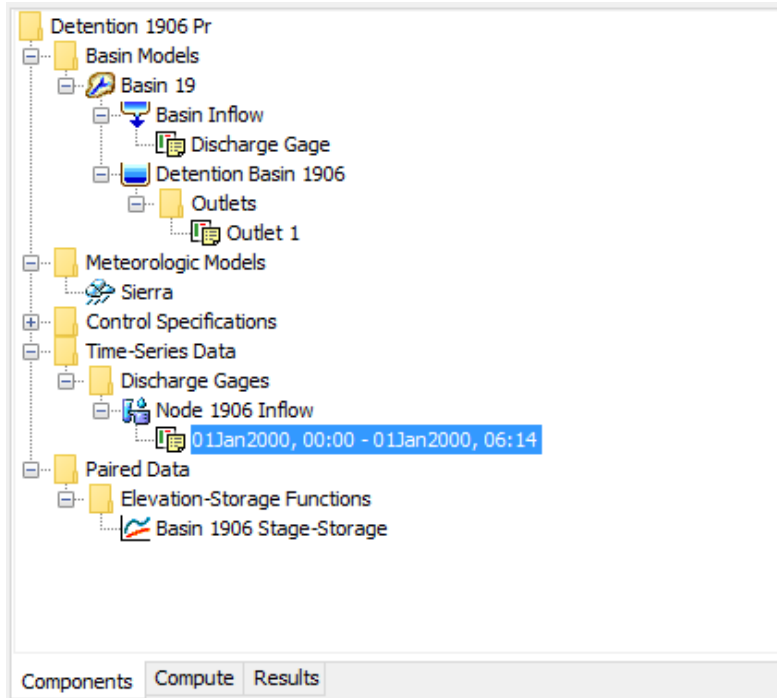
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.5

*Area (FT2) 3.75

*Coefficient: 0.6



Time-Series Gage		Time Window	Table	Graph
Time (ddMMYYYY, HH:mm)		Discharge (CFS)		
01Jan2000, 00:00		0.0		
01Jan2000, 00:01		1.0		
01Jan2000, 00:02		1.9		
01Jan2000, 00:03		2.9		
01Jan2000, 00:04		3.8		
01Jan2000, 00:05		4.8		
01Jan2000, 00:06		5.7		
01Jan2000, 00:07		6.7		
01Jan2000, 00:08		7.6		
01Jan2000, 00:09		8.6		
01Jan2000, 00:10		9.5		
01Jan2000, 00:11		10.5		
01Jan2000, 00:12		10.5		
01Jan2000, 00:13		10.5		
01Jan2000, 00:14		10.6		
01Jan2000, 00:15		10.6		
01Jan2000, 00:16		10.6		
01Jan2000, 00:17		10.6		
01Jan2000, 00:18		10.6		
01Jan2000, 00:19		10.6		
01Jan2000, 00:20		10.7		
01Jan2000, 00:21		10.7		
01Jan2000, 00:22		10.7		
01Jan2000, 00:23		10.7		
01Jan2000, 00:24		10.8		

Detention 1906 Pr

Basin Models

Basin 19

Basin Inflow

Detention Basin 1906

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Time-Series Data

Discharge Gages

Node 1906 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:14

Paired Data

Elevation-Storage Functions

Basin 1906 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	2.801
9.0	7.017

Project: Detention 1906 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1906

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 19
End of Run:	01Jan2000, 06:14	Meteorologic Model:	Sierra
Compute Time:	10Jan2017, 13:04:08	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	198.6 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:13
Peak Discharge:	49.6 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:24
Inflow Volume:	14.6 (AC-FT)	Peak Storage:	6.2 (AC-FT)
Discharge Volume:	12.1 (AC-FT)	Peak Elevation:	8.0 (FT)

Observed Hydrograph at Gage Node 1906 Inflow

Peak Discharge:	198.6 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:13
Mean Abs Error:	19.2 (CFS)	RMS Error:	34.6 (CFS)
Volume:	14.6 (AC-FT)	Volume Residual:	-2.5 (AC-FT)
Nash-Sutcliffe:	0.120		

Project: Detention 1906 Pr Simulation Run: Run 1
Reservoir: Detention Basin 1906

Start of Run: 01Jan2000, 00:00
End of Run: 01Jan2000, 06:14
Compute Time: 10Jan2017, 13:04:08

Basin Model: Basin 19
Meteorologic Model: Sierra
Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:02	1.9	0.0	0.0	0.0	1.9
01Jan2000	00:03	2.9	0.0	0.0	0.0	2.9
01Jan2000	00:04	3.8	0.0	0.0	0.0	3.8
01Jan2000	00:05	4.8	0.0	0.0	0.0	4.8
01Jan2000	00:06	5.7	0.0	0.0	0.0	5.7
01Jan2000	00:07	6.7	0.0	0.0	0.0	6.7
01Jan2000	00:08	7.6	0.0	0.1	0.0	7.6
01Jan2000	00:09	8.6	0.1	0.1	0.0	8.6
01Jan2000	00:10	9.5	0.1	0.1	0.0	9.5
01Jan2000	00:11	10.5	0.1	0.1	0.0	10.5
01Jan2000	00:12	10.5	0.1	0.1	0.0	10.5
01Jan2000	00:13	10.5	0.1	0.2	0.0	10.5
01Jan2000	00:14	10.6	0.1	0.2	0.0	10.6
01Jan2000	00:15	10.6	0.1	0.2	0.0	10.6
01Jan2000	00:16	10.6	0.2	0.2	0.0	10.6
01Jan2000	00:17	10.6	0.2	0.2	0.0	10.6
01Jan2000	00:18	10.6	0.2	0.3	0.0	10.6
01Jan2000	00:19	10.6	0.2	0.3	0.0	10.6
01Jan2000	00:20	10.7	0.2	0.3	0.0	10.7
01Jan2000	00:21	10.7	0.2	0.3	0.0	10.7
01Jan2000	00:22	10.7	0.2	0.3	0.0	10.7
01Jan2000	00:23	10.7	0.3	0.4	0.0	10.7
01Jan2000	00:24	10.8	0.3	0.4	0.0	10.8
01Jan2000	00:25	10.8	0.3	0.4	0.0	10.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	10.9	0.3	0.4	0.0	10.9
01Jan2000	00:27	10.9	0.3	0.4	0.0	10.9
01Jan2000	00:28	11.0	0.3	0.5	0.0	11.0
01Jan2000	00:29	11.0	0.3	0.5	0.0	11.0
01Jan2000	00:30	11.1	0.4	0.5	2.0	11.1
01Jan2000	00:31	11.1	0.4	0.5	3.1	11.1
01Jan2000	00:32	11.2	0.4	0.5	3.8	11.2
01Jan2000	00:33	11.2	0.4	0.6	4.4	11.2
01Jan2000	00:34	11.2	0.4	0.6	4.8	11.2
01Jan2000	00:35	11.2	0.4	0.6	5.2	11.2
01Jan2000	00:36	11.3	0.4	0.6	5.6	11.3
01Jan2000	00:37	11.3	0.4	0.6	5.9	11.3
01Jan2000	00:38	11.3	0.4	0.6	6.2	11.3
01Jan2000	00:39	11.3	0.4	0.6	6.4	11.3
01Jan2000	00:40	11.3	0.4	0.6	6.6	11.3
01Jan2000	00:41	11.3	0.5	0.6	6.9	11.3
01Jan2000	00:42	11.4	0.5	0.7	7.1	11.4
01Jan2000	00:43	11.4	0.5	0.7	7.3	11.4
01Jan2000	00:44	11.4	0.5	0.7	7.4	11.4
01Jan2000	00:45	11.4	0.5	0.7	7.6	11.4
01Jan2000	00:46	11.5	0.5	0.7	7.8	11.5
01Jan2000	00:47	11.5	0.5	0.7	7.9	11.5
01Jan2000	00:48	11.6	0.5	0.7	8.0	11.6
01Jan2000	00:49	11.6	0.5	0.7	8.2	11.6
01Jan2000	00:50	11.7	0.5	0.7	8.3	11.7
01Jan2000	00:51	11.7	0.5	0.7	8.4	11.7
01Jan2000	00:52	11.8	0.5	0.7	8.6	11.8
01Jan2000	00:53	11.8	0.5	0.7	8.7	11.8
01Jan2000	00:54	11.9	0.5	0.7	8.8	11.9
01Jan2000	00:55	11.9	0.5	0.7	8.9	11.9
01Jan2000	00:56	11.9	0.5	0.7	9.0	11.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	12.0	0.5	0.8	9.1	12.0
01Jan2000	00:58	12.0	0.5	0.8	9.2	12.0
01Jan2000	00:59	12.0	0.5	0.8	9.3	12.0
01Jan2000	01:00	12.0	0.5	0.8	9.4	12.0
01Jan2000	01:01	12.1	0.5	0.8	9.5	12.1
01Jan2000	01:02	12.1	0.5	0.8	9.6	12.1
01Jan2000	01:03	12.1	0.6	0.8	9.7	12.1
01Jan2000	01:04	12.1	0.6	0.8	9.7	12.1
01Jan2000	01:05	12.2	0.6	0.8	9.8	12.2
01Jan2000	01:06	12.2	0.6	0.8	9.9	12.2
01Jan2000	01:07	12.3	0.6	0.8	10.0	12.3
01Jan2000	01:08	12.3	0.6	0.8	10.0	12.3
01Jan2000	01:09	12.4	0.6	0.8	10.1	12.4
01Jan2000	01:10	12.5	0.6	0.8	10.2	12.5
01Jan2000	01:11	12.5	0.6	0.8	10.3	12.5
01Jan2000	01:12	12.6	0.6	0.8	10.3	12.6
01Jan2000	01:13	12.6	0.6	0.8	10.4	12.6
01Jan2000	01:14	12.7	0.6	0.8	10.5	12.7
01Jan2000	01:15	12.8	0.6	0.8	10.5	12.8
01Jan2000	01:16	12.8	0.6	0.8	10.6	12.8
01Jan2000	01:17	12.9	0.6	0.8	10.7	12.9
01Jan2000	01:18	12.9	0.6	0.9	10.7	12.9
01Jan2000	01:19	13.0	0.6	0.9	10.8	13.0
01Jan2000	01:20	13.0	0.6	0.9	10.9	13.0
01Jan2000	01:21	13.0	0.6	0.9	10.9	13.0
01Jan2000	01:22	13.1	0.6	0.9	11.0	13.1
01Jan2000	01:23	13.1	0.6	0.9	11.0	13.1
01Jan2000	01:24	13.2	0.6	0.9	11.1	13.2
01Jan2000	01:25	13.2	0.6	0.9	11.2	13.2
01Jan2000	01:26	13.2	0.6	0.9	11.2	13.2
01Jan2000	01:27	13.3	0.6	0.9	11.3	13.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	13.3	0.6	0.9	11.3	13.3
01Jan2000	01:29	13.4	0.6	0.9	11.4	13.4
01Jan2000	01:30	13.4	0.6	0.9	11.4	13.4
01Jan2000	01:31	13.5	0.6	0.9	11.5	13.5
01Jan2000	01:32	13.6	0.6	0.9	11.6	13.6
01Jan2000	01:33	13.7	0.6	0.9	11.6	13.7
01Jan2000	01:34	13.7	0.6	0.9	11.7	13.7
01Jan2000	01:35	13.8	0.6	0.9	11.7	13.8
01Jan2000	01:36	13.9	0.6	0.9	11.8	13.9
01Jan2000	01:37	14.0	0.7	0.9	11.8	14.0
01Jan2000	01:38	14.0	0.7	0.9	11.9	14.0
01Jan2000	01:39	14.1	0.7	0.9	12.0	14.1
01Jan2000	01:40	14.1	0.7	0.9	12.0	14.1
01Jan2000	01:41	14.2	0.7	0.9	12.1	14.2
01Jan2000	01:42	14.2	0.7	1.0	12.1	14.2
01Jan2000	01:43	14.3	0.7	1.0	12.2	14.3
01Jan2000	01:44	14.3	0.7	1.0	12.2	14.3
01Jan2000	01:45	14.4	0.7	1.0	12.3	14.4
01Jan2000	01:46	14.4	0.7	1.0	12.3	14.4
01Jan2000	01:47	14.5	0.7	1.0	12.4	14.5
01Jan2000	01:48	14.5	0.7	1.0	12.5	14.5
01Jan2000	01:49	14.6	0.7	1.0	12.5	14.6
01Jan2000	01:50	14.6	0.7	1.0	12.6	14.6
01Jan2000	01:51	14.7	0.7	1.0	12.6	14.7
01Jan2000	01:52	14.8	0.7	1.0	12.7	14.8
01Jan2000	01:53	14.9	0.7	1.0	12.7	14.9
01Jan2000	01:54	15.0	0.7	1.0	12.8	15.0
01Jan2000	01:55	15.1	0.7	1.0	12.8	15.1
01Jan2000	01:56	15.1	0.7	1.0	12.9	15.1
01Jan2000	01:57	15.2	0.7	1.0	12.9	15.2
01Jan2000	01:58	15.3	0.7	1.0	13.0	15.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	15.4	0.7	1.0	13.1	15.4
01Jan2000	02:00	15.5	0.7	1.0	13.1	15.5
01Jan2000	02:01	15.6	0.7	1.0	13.2	15.6
01Jan2000	02:02	15.7	0.7	1.0	13.2	15.7
01Jan2000	02:03	15.7	0.7	1.0	13.3	15.7
01Jan2000	02:04	15.8	0.7	1.0	13.3	15.8
01Jan2000	02:05	15.8	0.7	1.1	13.4	15.8
01Jan2000	02:06	15.9	0.7	1.1	13.5	15.9
01Jan2000	02:07	15.9	0.7	1.1	13.5	15.9
01Jan2000	02:08	16.0	0.7	1.1	13.6	16.0
01Jan2000	02:09	16.0	0.7	1.1	13.6	16.0
01Jan2000	02:10	16.1	0.8	1.1	13.7	16.1
01Jan2000	02:11	16.1	0.8	1.1	13.7	16.1
01Jan2000	02:12	16.2	0.8	1.1	13.8	16.2
01Jan2000	02:13	16.3	0.8	1.1	13.9	16.3
01Jan2000	02:14	16.5	0.8	1.1	13.9	16.5
01Jan2000	02:15	16.6	0.8	1.1	14.0	16.6
01Jan2000	02:16	16.7	0.8	1.1	14.0	16.7
01Jan2000	02:17	16.8	0.8	1.1	14.1	16.8
01Jan2000	02:18	17.0	0.8	1.1	14.2	17.0
01Jan2000	02:19	17.1	0.8	1.1	14.2	17.1
01Jan2000	02:20	17.2	0.8	1.1	14.3	17.2
01Jan2000	02:21	17.3	0.8	1.1	14.4	17.3
01Jan2000	02:22	17.5	0.8	1.1	14.4	17.5
01Jan2000	02:23	17.6	0.8	1.1	14.5	17.6
01Jan2000	02:24	17.7	0.8	1.2	14.6	17.7
01Jan2000	02:25	17.8	0.8	1.2	14.6	17.8
01Jan2000	02:26	17.8	0.8	1.2	14.7	17.8
01Jan2000	02:27	17.9	0.8	1.2	14.8	17.9
01Jan2000	02:28	18.0	0.8	1.2	14.8	18.0
01Jan2000	02:29	18.1	0.8	1.2	14.9	18.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	18.2	0.8	1.2	15.0	18.2
01Jan2000	02:31	18.3	0.8	1.2	15.0	18.3
01Jan2000	02:32	18.3	0.8	1.2	15.1	18.3
01Jan2000	02:33	18.4	0.8	1.2	15.2	18.4
01Jan2000	02:34	18.5	0.8	1.2	15.2	18.5
01Jan2000	02:35	18.7	0.9	1.2	15.3	18.7
01Jan2000	02:36	18.9	0.9	1.2	15.4	18.9
01Jan2000	02:37	19.0	0.9	1.2	15.5	19.0
01Jan2000	02:38	19.2	0.9	1.2	15.5	19.2
01Jan2000	02:39	19.4	0.9	1.2	15.6	19.4
01Jan2000	02:40	19.6	0.9	1.3	15.7	19.6
01Jan2000	02:41	19.8	0.9	1.3	15.8	19.8
01Jan2000	02:42	20.0	0.9	1.3	15.9	20.0
01Jan2000	02:43	20.1	0.9	1.3	15.9	20.1
01Jan2000	02:44	20.3	0.9	1.3	16.0	20.3
01Jan2000	02:45	20.5	0.9	1.3	16.1	20.5
01Jan2000	02:46	20.6	0.9	1.3	16.2	20.6
01Jan2000	02:47	20.7	0.9	1.3	16.3	20.7
01Jan2000	02:48	20.8	0.9	1.3	16.4	20.8
01Jan2000	02:49	20.9	0.9	1.3	16.5	20.9
01Jan2000	02:50	21.0	0.9	1.3	16.5	21.0
01Jan2000	02:51	21.2	0.9	1.3	16.6	21.2
01Jan2000	02:52	21.3	1.0	1.4	16.7	21.3
01Jan2000	02:53	21.4	1.0	1.4	16.8	21.4
01Jan2000	02:54	21.5	1.0	1.4	16.9	21.5
01Jan2000	02:55	21.6	1.0	1.4	17.0	21.6
01Jan2000	02:56	21.7	1.0	1.4	17.1	21.7
01Jan2000	02:57	22.0	1.0	1.4	17.2	22.0
01Jan2000	02:58	22.3	1.0	1.4	17.2	22.3
01Jan2000	02:59	22.6	1.0	1.4	17.3	22.6
01Jan2000	03:00	22.9	1.0	1.4	17.4	22.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	23.2	1.0	1.4	17.5	23.2
01Jan2000	03:02	23.4	1.0	1.5	17.6	23.4
01Jan2000	03:03	23.7	1.0	1.5	17.8	23.7
01Jan2000	03:04	24.0	1.0	1.5	17.9	24.0
01Jan2000	03:05	24.3	1.0	1.5	18.0	24.3
01Jan2000	03:06	24.6	1.1	1.5	18.1	24.6
01Jan2000	03:07	24.9	1.1	1.5	18.2	24.9
01Jan2000	03:08	25.1	1.1	1.5	18.3	25.1
01Jan2000	03:09	25.3	1.1	1.5	18.4	25.3
01Jan2000	03:10	25.5	1.1	1.6	18.6	25.5
01Jan2000	03:11	25.7	1.1	1.6	18.7	25.7
01Jan2000	03:12	25.9	1.1	1.6	18.8	25.9
01Jan2000	03:13	26.0	1.1	1.6	18.9	26.0
01Jan2000	03:14	26.2	1.1	1.6	19.0	26.2
01Jan2000	03:15	26.4	1.1	1.6	19.2	26.4
01Jan2000	03:16	26.6	1.1	1.6	19.3	26.6
01Jan2000	03:17	26.8	1.2	1.7	19.4	26.8
01Jan2000	03:18	27.0	1.2	1.7	19.5	27.0
01Jan2000	03:19	27.5	1.2	1.7	19.7	27.5
01Jan2000	03:20	28.1	1.2	1.7	19.8	28.1
01Jan2000	03:21	28.6	1.2	1.7	19.9	28.6
01Jan2000	03:22	29.2	1.2	1.7	20.1	29.2
01Jan2000	03:23	29.7	1.2	1.8	20.2	29.7
01Jan2000	03:24	30.3	1.2	1.8	20.4	30.3
01Jan2000	03:25	30.8	1.3	1.8	20.5	30.8
01Jan2000	03:26	31.4	1.3	1.8	20.7	31.4
01Jan2000	03:27	31.9	1.3	1.8	20.9	31.9
01Jan2000	03:28	32.5	1.3	1.9	21.0	32.5
01Jan2000	03:29	33.0	1.3	1.9	21.2	33.0
01Jan2000	03:30	33.4	1.3	1.9	21.4	33.4
01Jan2000	03:31	33.8	1.3	1.9	21.6	33.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	34.3	1.4	2.0	21.7	34.3
01Jan2000	03:33	34.7	1.4	2.0	21.9	34.7
01Jan2000	03:34	35.1	1.4	2.0	22.1	35.1
01Jan2000	03:35	35.5	1.4	2.0	22.3	35.5
01Jan2000	03:36	35.9	1.4	2.1	22.5	35.9
01Jan2000	03:37	36.3	1.5	2.1	22.7	36.3
01Jan2000	03:38	36.8	1.5	2.1	22.9	36.8
01Jan2000	03:39	37.2	1.5	2.1	23.1	37.2
01Jan2000	03:40	37.6	1.5	2.2	23.3	37.6
01Jan2000	03:41	39.2	1.5	2.2	23.5	39.2
01Jan2000	03:42	40.8	1.6	2.2	23.7	40.8
01Jan2000	03:43	42.4	1.6	2.3	23.9	42.4
01Jan2000	03:44	44.0	1.6	2.3	24.2	44.0
01Jan2000	03:45	45.6	1.6	2.3	24.5	45.6
01Jan2000	03:46	47.2	1.7	2.4	24.8	47.2
01Jan2000	03:47	48.8	1.7	2.4	25.0	48.8
01Jan2000	03:48	50.4	1.7	2.5	25.4	50.4
01Jan2000	03:49	52.0	1.8	2.5	25.7	52.0
01Jan2000	03:50	53.6	1.8	2.6	26.0	53.6
01Jan2000	03:51	55.2	1.8	2.6	26.4	55.2
01Jan2000	03:52	64.5	1.9	2.7	26.8	64.5
01Jan2000	03:53	73.9	1.9	2.8	27.3	73.9
01Jan2000	03:54	83.2	2.0	2.9	27.9	83.2
01Jan2000	03:55	92.5	2.1	3.0	28.5	92.5
01Jan2000	03:56	101.8	2.2	3.1	29.3	101.8
01Jan2000	03:57	111.2	2.3	3.3	30.1	111.2
01Jan2000	03:58	120.5	2.4	3.5	31.0	120.5
01Jan2000	03:59	129.8	2.5	3.6	32.0	129.8
01Jan2000	04:00	139.1	2.7	3.8	33.0	139.1
01Jan2000	04:01	148.5	2.8	4.0	34.0	148.5
01Jan2000	04:02	157.8	3.0	4.2	34.9	157.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	161.5	3.2	4.4	35.8	161.5
01Jan2000	04:04	165.2	3.3	4.6	36.8	165.2
01Jan2000	04:05	168.9	3.5	4.9	37.7	168.9
01Jan2000	04:06	172.6	3.7	5.1	38.6	172.6
01Jan2000	04:07	176.4	3.9	5.3	39.5	176.4
01Jan2000	04:08	180.1	4.1	5.5	40.5	180.1
01Jan2000	04:09	183.8	4.3	5.8	41.4	183.8
01Jan2000	04:10	187.5	4.5	6.0	42.3	187.5
01Jan2000	04:11	191.2	4.7	6.2	43.2	191.2
01Jan2000	04:12	194.9	4.9	6.5	44.1	194.9
01Jan2000	04:13	198.6	5.1	6.7	45.0	198.6
01Jan2000	04:14	184.6	5.3	7.0	45.9	184.6
01Jan2000	04:15	170.6	5.5	7.2	46.6	170.6
01Jan2000	04:16	156.5	5.6	7.4	47.3	156.5
01Jan2000	04:17	142.5	5.8	7.5	47.9	142.5
01Jan2000	04:18	128.5	5.9	7.7	48.3	128.5
01Jan2000	04:19	114.5	6.0	7.8	48.7	114.5
01Jan2000	04:20	100.4	6.1	7.9	49.1	100.4
01Jan2000	04:21	86.4	6.1	8.0	49.3	86.4
01Jan2000	04:22	72.4	6.2	8.0	49.5	72.4
01Jan2000	04:23	58.3	6.2	8.0	49.6	58.3
01Jan2000	04:24	44.3	6.2	8.0	49.6	44.3
01Jan2000	04:25	43.0	6.2	8.0	49.5	43.0
01Jan2000	04:26	41.6	6.2	8.0	49.5	41.6
01Jan2000	04:27	40.3	6.2	8.0	49.4	40.3
01Jan2000	04:28	39.0	6.2	8.0	49.4	39.0
01Jan2000	04:29	37.6	6.1	8.0	49.3	37.6
01Jan2000	04:30	36.3	6.1	8.0	49.3	36.3
01Jan2000	04:31	34.9	6.1	7.9	49.2	34.9
01Jan2000	04:32	33.6	6.1	7.9	49.1	33.6
01Jan2000	04:33	32.3	6.1	7.9	49.0	32.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	30.9	6.0	7.8	48.9	30.9
01Jan2000	04:35	29.6	6.0	7.8	48.8	29.6
01Jan2000	04:36	29.0	6.0	7.8	48.7	29.0
01Jan2000	04:37	28.4	6.0	7.8	48.6	28.4
01Jan2000	04:38	27.9	5.9	7.7	48.5	27.9
01Jan2000	04:39	27.3	5.9	7.7	48.4	27.3
01Jan2000	04:40	26.7	5.9	7.7	48.3	26.7
01Jan2000	04:41	26.1	5.9	7.6	48.1	26.1
01Jan2000	04:42	25.5	5.8	7.6	48.0	25.5
01Jan2000	04:43	24.9	5.8	7.5	47.9	24.9
01Jan2000	04:44	24.4	5.8	7.5	47.8	24.4
01Jan2000	04:45	23.8	5.7	7.5	47.6	23.8
01Jan2000	04:46	23.2	5.7	7.4	47.5	23.2
01Jan2000	04:47	22.9	5.7	7.4	47.4	22.9
01Jan2000	04:48	22.5	5.6	7.3	47.2	22.5
01Jan2000	04:49	22.2	5.6	7.3	47.1	22.2
01Jan2000	04:50	21.8	5.6	7.3	46.9	21.8
01Jan2000	04:51	21.5	5.5	7.2	46.8	21.5
01Jan2000	04:52	21.1	5.5	7.2	46.7	21.1
01Jan2000	04:53	20.8	5.4	7.1	46.5	20.8
01Jan2000	04:54	20.4	5.4	7.1	46.4	20.4
01Jan2000	04:55	20.1	5.4	7.1	46.2	20.1
01Jan2000	04:56	19.7	5.3	7.0	46.1	19.7
01Jan2000	04:57	19.4	5.3	7.0	45.9	19.4
01Jan2000	04:58	19.2	5.3	6.9	45.8	19.2
01Jan2000	04:59	18.9	5.2	6.9	45.6	18.9
01Jan2000	05:00	18.7	5.2	6.8	45.4	18.7
01Jan2000	05:01	18.5	5.2	6.8	45.3	18.5
01Jan2000	05:02	18.3	5.1	6.8	45.1	18.3
01Jan2000	05:03	18.0	5.1	6.7	45.0	18.0
01Jan2000	05:04	17.8	5.0	6.7	44.8	17.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	17.6	5.0	6.6	44.7	17.6
01Jan2000	05:06	17.4	5.0	6.6	44.5	17.4
01Jan2000	05:07	17.1	4.9	6.5	44.3	17.1
01Jan2000	05:08	16.9	4.9	6.5	44.2	16.9
01Jan2000	05:09	16.7	4.9	6.4	44.0	16.7
01Jan2000	05:10	16.6	4.8	6.4	43.8	16.6
01Jan2000	05:11	16.4	4.8	6.4	43.7	16.4
01Jan2000	05:12	16.2	4.7	6.3	43.5	16.2
01Jan2000	05:13	16.1	4.7	6.3	43.3	16.1
01Jan2000	05:14	15.9	4.7	6.2	43.2	15.9
01Jan2000	05:15	15.8	4.6	6.2	43.0	15.8
01Jan2000	05:16	15.6	4.6	6.1	42.8	15.6
01Jan2000	05:17	15.4	4.6	6.1	42.7	15.4
01Jan2000	05:18	15.3	4.5	6.0	42.5	15.3
01Jan2000	05:19	15.1	4.5	6.0	42.3	15.1
01Jan2000	05:20	15.0	4.4	6.0	42.1	15.0
01Jan2000	05:21	14.8	4.4	5.9	42.0	14.8
01Jan2000	05:22	14.7	4.4	5.9	41.8	14.7
01Jan2000	05:23	14.6	4.3	5.8	41.6	14.6
01Jan2000	05:24	14.5	4.3	5.8	41.5	14.5
01Jan2000	05:25	14.3	4.3	5.7	41.3	14.3
01Jan2000	05:26	14.2	4.2	5.7	41.1	14.2
01Jan2000	05:27	14.1	4.2	5.6	40.9	14.1
01Jan2000	05:28	14.0	4.2	5.6	40.8	14.0
01Jan2000	05:29	13.8	4.1	5.6	40.6	13.8
01Jan2000	05:30	13.7	4.1	5.5	40.4	13.7
01Jan2000	05:31	13.6	4.0	5.5	40.2	13.6
01Jan2000	05:32	13.5	4.0	5.4	40.1	13.5
01Jan2000	05:33	13.4	4.0	5.4	39.9	13.4
01Jan2000	05:34	13.3	3.9	5.3	39.7	13.3
01Jan2000	05:35	13.2	3.9	5.3	39.5	13.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	13.1	3.9	5.3	39.4	13.1
01Jan2000	05:37	13.0	3.8	5.2	39.2	13.0
01Jan2000	05:38	12.9	3.8	5.2	39.0	12.9
01Jan2000	05:39	12.8	3.7	5.1	38.8	12.8
01Jan2000	05:40	12.7	3.7	5.1	38.6	12.7
01Jan2000	05:41	12.6	3.7	5.0	38.5	12.6
01Jan2000	05:42	12.5	3.6	5.0	38.3	12.5
01Jan2000	05:43	12.4	3.6	5.0	38.1	12.4
01Jan2000	05:44	12.4	3.6	4.9	37.9	12.4
01Jan2000	05:45	12.3	3.5	4.9	37.7	12.3
01Jan2000	05:46	12.2	3.5	4.8	37.6	12.2
01Jan2000	05:47	12.1	3.5	4.8	37.4	12.1
01Jan2000	05:48	12.0	3.4	4.7	37.2	12.0
01Jan2000	05:49	11.9	3.4	4.7	37.0	11.9
01Jan2000	05:50	11.9	3.4	4.7	36.8	11.9
01Jan2000	05:51	11.8	3.3	4.6	36.7	11.8
01Jan2000	05:52	11.7	3.3	4.6	36.5	11.7
01Jan2000	05:53	11.6	3.3	4.5	36.3	11.6
01Jan2000	05:54	11.6	3.2	4.5	36.1	11.6
01Jan2000	05:55	11.5	3.2	4.5	35.9	11.5
01Jan2000	05:56	11.4	3.2	4.4	35.8	11.4
01Jan2000	05:57	11.3	3.1	4.4	35.6	11.3
01Jan2000	05:58	11.3	3.1	4.3	35.4	11.3
01Jan2000	05:59	11.2	3.1	4.3	35.2	11.2
01Jan2000	06:00	11.1	3.0	4.3	35.0	11.1
01Jan2000	06:01	11.0	3.0	4.2	34.9	11.0
01Jan2000	06:02	11.0	3.0	4.2	34.7	11.0
01Jan2000	06:03	10.9	2.9	4.2	34.5	10.9
01Jan2000	06:04	9.9	2.9	4.1	34.3	9.9
01Jan2000	06:05	8.9	2.9	4.1	34.1	8.9
01Jan2000	06:06	7.9	2.8	4.0	33.9	7.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	6.9	2.8	4.0	33.7	6.9
01Jan2000	06:08	5.9	2.8	3.9	33.4	5.9
01Jan2000	06:09	5.0	2.7	3.9	33.2	5.0
01Jan2000	06:10	4.0	2.7	3.8	32.9	4.0
01Jan2000	06:11	3.0	2.6	3.8	32.6	3.0
01Jan2000	06:12	2.0	2.6	3.7	32.3	2.0
01Jan2000	06:13	1.0	2.6	3.6	32.0	1.0
01Jan2000	06:14	0.0	2.5	3.6	31.7	0.0

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 20

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2012 Advanced Engineering Software (aes)
 Ver. 19.0 Release Date: 06/01/2012 License ID 1355

Analysis prepared by:

Fuscoe Engineering
 6390 Greenwich Dr.
 Suite 170
 San Diego, CA 92122

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * SUBBASIN 20 *
 * NO DETENTION *

FILE NAME: P-20.DAT
 TIME/DATE OF STUDY: 09:52 09/24/2014

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 3.500
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES: WIDTH LIP	MANNING FACTOR
	(FT)	(FT)		(FT)	(FT) (FT)	(n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2014.00 TO NODE 2013.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1110.00
 DOWNSTREAM ELEVATION(FEET) = 1105.00
 ELEVATION DIFFERENCE(FEET) = 5.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.158
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

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NOTE: RAINFALL INTENSITY IS BASED ON $T_c = 5$ -MINUTE.

SUBAREA RUNOFF(CFS) = 0.96

TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.96

FLOW PROCESS FROM NODE 2013.00 TO NODE 2012.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1105.00 DOWNSTREAM ELEVATION(FEET) = 1077.00

STREET LENGTH(FEET) = 550.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.46

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.24

HALFSTREET FLOOD WIDTH(FEET) = 5.65

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.95

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.95

STREET FLOW TRAVEL TIME(MIN.) = 2.32 T_c (MIN.) = 5.48

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.696

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.808

SUBAREA AREA(ACRES) = 0.71 SUBAREA RUNOFF(CFS) = 5.00

TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 5.91

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.44

FLOW VELOCITY(FEET/SEC.) = 4.39 DEPTH*VELOCITY(FT*FT/SEC.) = 1.21

LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2012.00 = 650.00 FEET.

FLOW PROCESS FROM NODE 2012.00 TO NODE 2005.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1071.00 DOWNSTREAM(FEET) = 1059.00

FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.7 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 9.83

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 5.91

PIPE TRAVEL TIME(MIN.) = 0.51 T_c (MIN.) = 5.99

LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2005.00 = 950.00 FEET.

FLOW PROCESS FROM NODE 2005.00 TO NODE 2005.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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*****
FLOW PROCESS FROM NODE    2009.00 TO NODE    2008.00 IS CODE =  21
```

```
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8000
S.C.S. CURVE NUMBER (AMC II) =  0
INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
UPSTREAM ELEVATION(FEET) =  1090.00
DOWNSTREAM ELEVATION(FEET) =  1088.00
ELEVATION DIFFERENCE(FEET) =  2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =  3.834
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
         THE MAXIMUM OVERLAND FLOW LENGTH =  80.00
         (Reference: Table 3-1B of Hydrology Manual)
         THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) =  3.02
TOTAL AREA(ACRES) =  0.41  TOTAL RUNOFF(CFS) =  3.02
```

```
*****
FLOW PROCESS FROM NODE    2008.00 TO NODE    2007.00 IS CODE =  52
```

```
-----
>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) =  1088.00  DOWNSTREAM(FEET) =  1082.00
CHANNEL LENGTH THRU SUBAREA(FEET) =  600.00  CHANNEL SLOPE =  0.0100
CHANNEL FLOW THRU SUBAREA(CFS) =  3.02
FLOW VELOCITY(FEET/SEC) =  1.88 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) =  5.32  Tc(MIN.) =  9.15
LONGEST FLOWPATH FROM NODE    2009.00 TO NODE    2007.00 =  700.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE    2008.00 TO NODE    2007.00 IS CODE =  81
```

```
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.245
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) =  0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.8094
SUBAREA AREA(ACRES) =  6.20  SUBAREA RUNOFF(CFS) =  31.36
TOTAL AREA(ACRES) =  6.6  TOTAL RUNOFF(CFS) =  33.41
TC(MIN.) =  9.15
```

```
*****
FLOW PROCESS FROM NODE    2007.00 TO NODE    2006.00 IS CODE =  31
```

```
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) =  1076.00  DOWNSTREAM(FEET) =  1051.00
FLOW LENGTH(FEET) =  50.00  MANNING'S N =  0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS  8.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =  39.35
ESTIMATED PIPE DIAMETER(INCH) =  18.00  NUMBER OF PIPES =  1
```

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PIPE-FLOW(CFS) = 33.41
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 9.17
LONGEST FLOWPATH FROM NODE 2009.00 TO NODE 2006.00 = 750.00 FEET.

FLOW PROCESS FROM NODE 2006.00 TO NODE 2006.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.17
RAINFALL INTENSITY(INCH/HR) = 6.24
TOTAL STREAM AREA(ACRES) = 6.61
PEAK FLOW RATE(CFS) AT CONFLUENCE = 33.41

FLOW PROCESS FROM NODE 2011.00 TO NODE 2010.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1078.00
DOWNSTREAM ELEVATION(FEET) = 1077.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.063
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 65.00
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.51
TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 1.51

FLOW PROCESS FROM NODE 2010.00 TO NODE 2006.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1077.00 DOWNSTREAM ELEVATION(FEET) = 1057.00
STREET LENGTH(FEET) = 350.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.98
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 5.92
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.26
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04

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STREET FLOW TRAVEL TIME(MIN.) = 1.37 Tc(MIN.) = 5.43
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.740
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.820
 SUBAREA AREA(ACRES) = 0.69 SUBAREA RUNOFF(CFS) = 4.94
 TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 6.38

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.51
 FLOW VELOCITY(FEET/SEC.) = 4.68 DEPTH*VELOCITY(FT*FT/SEC.) = 1.29
 LONGEST FLOWPATH FROM NODE 2011.00 TO NODE 2006.00 = 450.00 FEET.

FLOW PROCESS FROM NODE 2006.00 TO NODE 2006.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 5.43
 RAINFALL INTENSITY(INCH/HR) = 8.74
 TOTAL STREAM AREA(ACRES) = 0.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.38

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	33.41	9.17	6.236	6.61
2	6.38	5.43	8.740	0.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.18	5.43	8.740
2	37.96	9.17	6.236

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 37.96 Tc(MIN.) = 9.17
 TOTAL AREA(ACRES) = 7.5
 LONGEST FLOWPATH FROM NODE 2009.00 TO NODE 2006.00 = 750.00 FEET.

FLOW PROCESS FROM NODE 2006.00 TO NODE 2005.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1051.00 DOWNSTREAM(FEET) = 1049.00
 FLOW LENGTH(FEET) = 120.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.25
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 37.96
 PIPE TRAVEL TIME(MIN.) = 0.18 Tc(MIN.) = 9.35
 LONGEST FLOWPATH FROM NODE 2009.00 TO NODE 2005.00 = 870.00 FEET.

FLOW PROCESS FROM NODE 2005.00 TO NODE 2005.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	37.96	9.35	6.159	7.50

LONGEST FLOWPATH FROM NODE 2009.00 TO NODE 2005.00 = 870.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.91	5.99	8.212	0.84

LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2005.00 = 950.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.21	5.99	8.212
2	42.39	9.35	6.159

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 42.39 Tc(MIN.) = 9.35
TOTAL AREA(ACRES) = 8.3

FLOW PROCESS FROM NODE 2005.00 TO NODE 2004.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1049.00 DOWNSTREAM(FEET) = 1045.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 15.57
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.39
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 9.46
LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2004.00 = 1050.00 FEET.

FLOW PROCESS FROM NODE 2004.00 TO NODE 2003.00 IS CODE = 52

>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1045.00 DOWNSTREAM(FEET) = 1042.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 150.00 CHANNEL SLOPE = 0.0200
CHANNEL FLOW THRU SUBAREA(CFS) = 42.39
FLOW VELOCITY(FEET/SEC) = 5.22 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 9.93
LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2003.00 = 1200.00 FEET.

FLOW PROCESS FROM NODE 2004.00 TO NODE 2003.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.922

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

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S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.7394
SUBAREA AREA(ACRES) = 1.52 SUBAREA RUNOFF(CFS) = 3.15
TOTAL AREA(ACRES) = 9.9 TOTAL RUNOFF(CFS) = 43.18
TC(MIN.) = 9.93

FLOW PROCESS FROM NODE 2003.00 TO NODE 2000.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1042.00 DOWNSTREAM(FEET) = 1000.00
FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 33.29
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 43.18
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 10.01
LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2000.50 = 1350.00 FEET.

FLOW PROCESS FROM NODE 2000.50 TO NODE 2000.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1000.00 DOWNSTREAM(FEET) = 985.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 90.00 CHANNEL SLOPE = 0.1667
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1433 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 43.18
FLOW VELOCITY(FEET/SEC) = 7.43 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.20 Tc(MIN.) = 10.21
LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 2000.00 = 1440.00 FEET.

FLOW PROCESS FROM NODE 2000.50 TO NODE 2000.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.818
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.6587
SUBAREA AREA(ACRES) = 2.58 SUBAREA RUNOFF(CFS) = 5.25
TOTAL AREA(ACRES) = 12.4 TOTAL RUNOFF(CFS) = 47.67
TC(MIN.) = 10.21

FLOW PROCESS FROM NODE 2000.00 TO NODE 20.20 IS CODE = 41

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 986.50 DOWNSTREAM(FEET) = 969.10
FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.024
DEPTH OF FLOW IN 30.0 INCH PIPE IS 23.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.76
GIVEN PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 47.67
PIPE TRAVEL TIME(MIN.) = 0.43 Tc(MIN.) = 10.64

```

                                P-20
LONGEST FLOWPATH FROM NODE    2014.00 TO NODE    20.20 =    1740.00 FEET.
*****
FLOW PROCESS FROM NODE    20.20 TO NODE    20.10 IS CODE = 41
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 968.60 DOWNSTREAM(FEET) = 958.00
FLOW LENGTH(FEET) = 532.00 MANNING'S N = 0.024
DEPTH OF FLOW IN 42.0 INCH PIPE IS 24.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.08
GIVEN PIPE DIAMETER(INCH) = 42.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 47.67
PIPE TRAVEL TIME(MIN.) = 1.10 Tc(MIN.) = 11.73
LONGEST FLOWPATH FROM NODE    2014.00 TO NODE    20.10 =    2272.00 FEET.
*****
FLOW PROCESS FROM NODE    20.10 TO NODE    20.10 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.73
RAINFALL INTENSITY(INCH/HR) = 5.32
TOTAL STREAM AREA(ACRES) = 12.44
PEAK FLOW RATE(CFS) AT CONFLUENCE = 47.67
*****
FLOW PROCESS FROM NODE    2002.40 TO NODE    2002.20 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00
UPSTREAM ELEVATION(FEET) = 1035.00
DOWNSTREAM ELEVATION(FEET) = 1025.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.431
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.16
TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.16
*****
FLOW PROCESS FROM NODE    2002.20 TO NODE    2002.00 IS CODE = 53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1025.00 DOWNSTREAM(FEET) = 973.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.1300
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1217 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.16
FLOW VELOCITY(FEET/SEC) = 1.95 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.41 Tc(MIN.) = 7.84
LONGEST FLOWPATH FROM NODE    2002.40 TO NODE    2002.00 =    450.00 FEET.

```

 FLOW PROCESS FROM NODE 2002.20 TO NODE 2002.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.897
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 1.16 SUBAREA RUNOFF(CFS) = 2.80
 TOTAL AREA(ACRES) = 1.2 TOTAL RUNOFF(CFS) = 2.92
 TC(MIN.) = 7.84

 FLOW PROCESS FROM NODE 2002.00 TO NODE 20.10 IS CODE = 41

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 966.90 DOWNSTREAM(FEET) = 958.80
 FLOW LENGTH(FEET) = 198.00 MANNING'S N = 0.024
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 5.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.10
 GIVEN PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.92
 PIPE TRAVEL TIME(MIN.) = 0.65 Tc(MIN.) = 8.49
 LONGEST FLOWPATH FROM NODE 2002.40 TO NODE 20.10 = 648.00 FEET.

 FLOW PROCESS FROM NODE 20.10 TO NODE 20.10 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.49
 RAINFALL INTENSITY(INCH/HR) = 6.55
 TOTAL STREAM AREA(ACRES) = 1.21
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.92

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	47.67	11.73	5.319	12.44
2	2.92	8.49	6.553	1.21

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.42	8.49	6.553
2	50.04	11.73	5.319

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 50.04 Tc(MIN.) = 11.73
 TOTAL AREA(ACRES) = 13.6
 LONGEST FLOWPATH FROM NODE 2014.00 TO NODE 20.10 = 2272.00 FEET.

P-20

FLOW PROCESS FROM NODE 20.10 TO NODE 20.00 IS CODE = 41

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING USER-SPECIFIED PIPESIZE (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	957.00	DOWNSTREAM(FEET) =	944.80
FLOW LENGTH(FEET) =	200.00	MANNING'S N =	0.024
DEPTH OF FLOW IN 42.0 INCH PIPE IS	18.3 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	12.47		
GIVEN PIPE DIAMETER(INCH) =	42.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	50.04		
PIPE TRAVEL TIME(MIN.) =	0.27	Tc(MIN.) =	12.00
LONGEST FLOWPATH FROM NODE 2014.00 TO NODE	20.00 =	2472.00 FEET.	

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES)	=	13.6	TC(MIN.) =	12.00
PEAK FLOW RATE(CFS)	=	50.04		

=====

END OF RATIONAL METHOD ANALYSIS

♀

Sub-basin 20

Node to Node		Code	C	Area
			Factor	(ac.)
2014	2013	2	0.8	0.13
2013	2012	6	0.81	0.71
2009	2008	2	0.8	0.41
2008	2007	8	0.81	6.20
2011	2010	2	0.82	0.20
2010	2006	6	0.82	0.69

Detention 20, East Town Center, Node 2004

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 10 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 9.9 ACRES

RUNOFF COEFFICIENT 0.81

PEAK DISCHARGE 43.18 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 10 DISCHARGE (CFS) = 1.7

TIME (MIN) = 20 DISCHARGE (CFS) = 1.7

TIME (MIN) = 30 DISCHARGE (CFS) = 1.8

TIME (MIN) = 40 DISCHARGE (CFS) = 1.8

TIME (MIN) = 50 DISCHARGE (CFS) = 1.9

TIME (MIN) = 60 DISCHARGE (CFS) = 1.9

TIME (MIN) = 70 DISCHARGE (CFS) = 2

TIME (MIN) = 80 DISCHARGE (CFS) = 2.1

TIME (MIN) = 90 DISCHARGE (CFS) = 2.2

TIME (MIN) = 100 DISCHARGE (CFS) = 2.3

TIME (MIN) = 110 DISCHARGE (CFS) = 2.4

TIME (MIN) = 120 DISCHARGE (CFS) = 2.5

TIME (MIN) = 130 DISCHARGE (CFS) = 2.7

TIME (MIN) = 140 DISCHARGE (CFS) = 2.8

TIME (MIN) = 150 DISCHARGE (CFS) = 3

TIME (MIN) = 160 DISCHARGE (CFS) = 3.1

TIME (MIN) = 170 DISCHARGE (CFS) = 3.5
TIME (MIN) = 180 DISCHARGE (CFS) = 3.7
TIME (MIN) = 190 DISCHARGE (CFS) = 4.2
TIME (MIN) = 200 DISCHARGE (CFS) = 4.6
TIME (MIN) = 210 DISCHARGE (CFS) = 5.6
TIME (MIN) = 220 DISCHARGE (CFS) = 6.4
TIME (MIN) = 230 DISCHARGE (CFS) = 9.4
TIME (MIN) = 240 DISCHARGE (CFS) = 17.3
TIME (MIN) = 250 DISCHARGE (CFS) = 43.18
TIME (MIN) = 260 DISCHARGE (CFS) = 7.5
TIME (MIN) = 270 DISCHARGE (CFS) = 5
TIME (MIN) = 280 DISCHARGE (CFS) = 3.9
TIME (MIN) = 290 DISCHARGE (CFS) = 3.3
TIME (MIN) = 300 DISCHARGE (CFS) = 2.9
TIME (MIN) = 310 DISCHARGE (CFS) = 2.6
TIME (MIN) = 320 DISCHARGE (CFS) = 2.3
TIME (MIN) = 330 DISCHARGE (CFS) = 2.1
TIME (MIN) = 340 DISCHARGE (CFS) = 2
TIME (MIN) = 350 DISCHARGE (CFS) = 1.9
TIME (MIN) = 360 DISCHARGE (CFS) = 1.7
TIME (MIN) = 370 DISCHARGE (CFS) = 0

Detention 20 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a project tree for 'Detention 20 Pr'. The tree structure is as follows:

- Detention 20 Pr
 - Basin Models
 - Basin 20
 - Basin Inflow (selected)
 - Discharge Gage
 - Detention Basin 2003
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Time-Series Data
 - Discharge Gages
 - Node 2003 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
 - Paired Data
 - Elevation-Storage Functions
 - Basin 2003 Stage-Storage

Below the tree are three buttons: 'Components', 'Compute', and 'Results'. The 'Compute' button is highlighted.

The bottom section of the interface shows the configuration for the selected 'Basin Inflow' element. It includes tabs for 'Source', 'Inflow', and 'Options'. The 'Inflow' tab is active, displaying the following configuration:

- Basin Name:** Basin 20
- Element Name:** Basin Inflow
- Description:** Node 2003
- Downstream:** Detention Basin 2003
- Area (MI²):** 0.015
- Flow Method:** Discharge Gage

Detention 20 Pr

Basin Models

Basin 20

Basin Inflow

Discharge Gage

Detention Basin 2003

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Time-Series Data

Discharge Gages

Node 2003 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:10

Paired Data

Elevation-Storage Functions

Basin 2003 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 20

Element Name: Detention Basin 2003

Method: Orifice Outlet

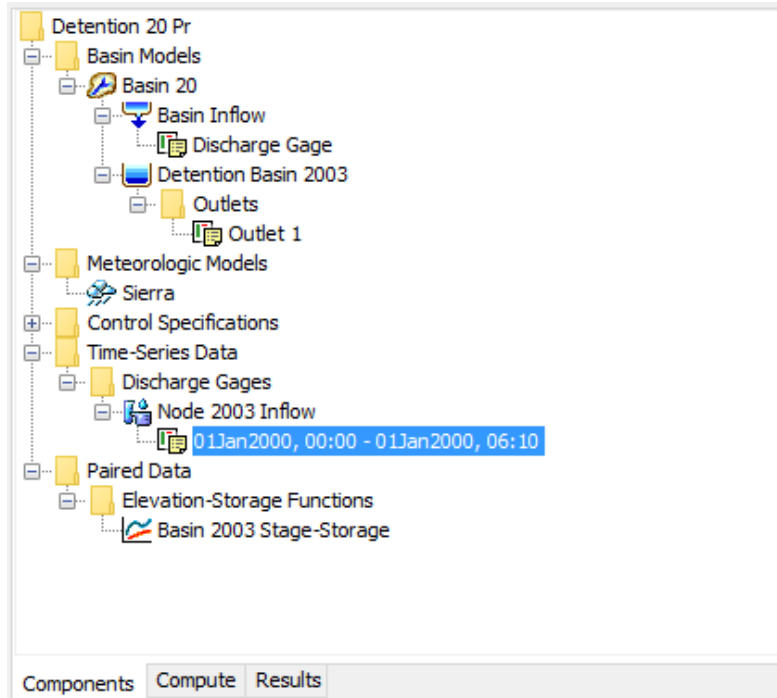
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.75

*Area (FT2) 1.767

*Coefficient: 0.6



Time-Series Gage		Time Window	Table	Graph
Time (ddMMYYYY, HH:mm)	Discharge (CFS)			
01Jan2000, 00:00	0.00			
01Jan2000, 00:10	1.70			
01Jan2000, 00:20	1.70			
01Jan2000, 00:30	1.80			
01Jan2000, 00:40	1.80			
01Jan2000, 00:50	1.90			
01Jan2000, 01:00	1.90			
01Jan2000, 01:10	2.00			
01Jan2000, 01:20	2.10			
01Jan2000, 01:30	2.20			
01Jan2000, 01:40	2.30			
01Jan2000, 01:50	2.40			
01Jan2000, 02:00	2.50			
01Jan2000, 02:10	2.70			
01Jan2000, 02:20	2.80			
01Jan2000, 02:30	3.00			
01Jan2000, 02:40	3.10			
01Jan2000, 02:50	3.50			
01Jan2000, 03:00	3.70			
01Jan2000, 03:10	4.20			
01Jan2000, 03:20	4.60			
01Jan2000, 03:30	5.60			
01Jan2000, 03:40	6.40			
01Jan2000, 03:50	9.40			
01Jan2000, 04:00	17.20			

Detention 20 Pr

Basin Models

Basin 20

Basin Inflow

Discharge Gage

Detention Basin 2003

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Time-Series Data

Discharge Gages

Node 2003 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:10

Paired Data

Elevation-Storage Functions

Basin 2003 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	1.884

Project: Detention 20 Pr Simulation Run: Run 1
Reservoir: Detention Basin 2003

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 20
End of Run:	01Jan2000, 06:10	Meteorologic Model:	Sierra
Compute Time:	10Jan2017, 14:34:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	43.2 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:10
Peak Discharge:	11.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:19
Inflow Volume:	2.3 (AC-FT)	Peak Storage:	1.1 (AC-FT)
Discharge Volume:	1.9 (AC-FT)	Peak Elevation:	2.4 (FT)

Observed Hydrograph at Gage Node 2003 Inflow

Peak Discharge:	43.2 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:10
Mean Abs Error:	3.6 (CFS)	RMS Error:	5.9 (CFS)
Volume:	2.3 (AC-FT)	Volume Residual:	-0.4 (AC-FT)
Nash-Sutcliffe:	0.160		

Project: Detention 20 Pr Simulation Run: Run 1
 Reservoir: Detention Basin 2003

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 20
 End of Run: 01Jan2000, 06:10 Meteorologic Model: Sierra
 Compute Time: 10Jan2017, 14:34:35 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:02	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:03	0.5	0.0	0.0	0.0	0.5
01Jan2000	00:04	0.7	0.0	0.0	0.0	0.7
01Jan2000	00:05	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:06	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:07	1.2	0.0	0.0	0.0	1.2
01Jan2000	00:08	1.4	0.0	0.0	0.0	1.4
01Jan2000	00:09	1.5	0.0	0.0	0.0	1.5
01Jan2000	00:10	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:11	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:12	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:13	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:14	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:15	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:16	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:17	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:18	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:19	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:20	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:21	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:22	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:23	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:24	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:25	1.8	0.0	0.1	0.0	1.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.8	0.0	0.1	0.0	1.8
01Jan2000	00:27	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:28	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:29	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:30	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:31	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:32	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:33	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:34	1.8	0.1	0.1	0.0	1.8
01Jan2000	00:35	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:36	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:37	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:38	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:39	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:40	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:41	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:42	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:43	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:44	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:45	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:46	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:47	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:48	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:49	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:50	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:51	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:52	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:53	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:54	1.9	0.1	0.3	0.0	1.9
01Jan2000	00:55	1.9	0.1	0.3	0.0	1.9
01Jan2000	00:56	1.9	0.1	0.3	0.0	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.9	0.1	0.3	0.0	1.9
01Jan2000	00:58	1.9	0.1	0.3	0.0	1.9
01Jan2000	00:59	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:00	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:01	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:02	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:03	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:04	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:05	2.0	0.1	0.3	0.0	2.0
01Jan2000	01:06	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:07	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:08	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:09	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:10	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:11	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:12	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:13	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:14	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:15	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:16	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:17	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:18	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:19	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:20	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:21	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:22	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:23	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:24	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:25	2.2	0.2	0.4	0.0	2.2
01Jan2000	01:26	2.2	0.2	0.4	0.0	2.2
01Jan2000	01:27	2.2	0.2	0.4	0.0	2.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:29	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:30	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:31	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:32	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:33	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:34	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:35	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:36	2.3	0.2	0.5	0.0	2.3
01Jan2000	01:37	2.3	0.2	0.5	0.0	2.3
01Jan2000	01:38	2.3	0.2	0.5	0.0	2.3
01Jan2000	01:39	2.3	0.2	0.5	0.0	2.3
01Jan2000	01:40	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:41	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:42	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:43	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:44	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:45	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:46	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:47	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:48	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:49	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:50	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:51	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:52	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:53	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:54	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:55	2.4	0.3	0.6	0.0	2.4
01Jan2000	01:56	2.5	0.3	0.6	0.0	2.5
01Jan2000	01:57	2.5	0.3	0.7	0.0	2.5
01Jan2000	01:58	2.5	0.3	0.7	0.0	2.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:00	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:01	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:02	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:03	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:04	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:05	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:06	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:07	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:08	2.7	0.3	0.7	0.0	2.7
01Jan2000	02:09	2.7	0.3	0.7	0.0	2.7
01Jan2000	02:10	2.7	0.4	0.8	0.1	2.7
01Jan2000	02:11	2.7	0.4	0.8	0.7	2.7
01Jan2000	02:12	2.7	0.4	0.8	0.9	2.7
01Jan2000	02:13	2.7	0.4	0.8	1.1	2.7
01Jan2000	02:14	2.7	0.4	0.8	1.3	2.7
01Jan2000	02:15	2.8	0.4	0.8	1.4	2.8
01Jan2000	02:16	2.8	0.4	0.8	1.5	2.8
01Jan2000	02:17	2.8	0.4	0.8	1.6	2.8
01Jan2000	02:18	2.8	0.4	0.8	1.6	2.8
01Jan2000	02:19	2.8	0.4	0.8	1.7	2.8
01Jan2000	02:20	2.8	0.4	0.8	1.8	2.8
01Jan2000	02:21	2.8	0.4	0.8	1.8	2.8
01Jan2000	02:22	2.8	0.4	0.8	1.9	2.8
01Jan2000	02:23	2.9	0.4	0.8	1.9	2.9
01Jan2000	02:24	2.9	0.4	0.8	2.0	2.9
01Jan2000	02:25	2.9	0.4	0.8	2.0	2.9
01Jan2000	02:26	2.9	0.4	0.8	2.1	2.9
01Jan2000	02:27	2.9	0.4	0.8	2.1	2.9
01Jan2000	02:28	3.0	0.4	0.8	2.2	3.0
01Jan2000	02:29	3.0	0.4	0.8	2.2	3.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	3.0	0.4	0.8	2.2	3.0
01Jan2000	02:31	3.0	0.4	0.8	2.3	3.0
01Jan2000	02:32	3.0	0.4	0.8	2.3	3.0
01Jan2000	02:33	3.0	0.4	0.8	2.3	3.0
01Jan2000	02:34	3.0	0.4	0.8	2.4	3.0
01Jan2000	02:35	3.0	0.4	0.8	2.4	3.0
01Jan2000	02:36	3.1	0.4	0.8	2.4	3.1
01Jan2000	02:37	3.1	0.4	0.8	2.5	3.1
01Jan2000	02:38	3.1	0.4	0.8	2.5	3.1
01Jan2000	02:39	3.1	0.4	0.8	2.5	3.1
01Jan2000	02:40	3.1	0.4	0.8	2.5	3.1
01Jan2000	02:41	3.1	0.4	0.8	2.6	3.1
01Jan2000	02:42	3.2	0.4	0.8	2.6	3.2
01Jan2000	02:43	3.2	0.4	0.8	2.6	3.2
01Jan2000	02:44	3.3	0.4	0.8	2.6	3.3
01Jan2000	02:45	3.3	0.4	0.8	2.7	3.3
01Jan2000	02:46	3.3	0.4	0.8	2.7	3.3
01Jan2000	02:47	3.4	0.4	0.9	2.7	3.4
01Jan2000	02:48	3.4	0.4	0.9	2.7	3.4
01Jan2000	02:49	3.5	0.4	0.9	2.8	3.5
01Jan2000	02:50	3.5	0.4	0.9	2.8	3.5
01Jan2000	02:51	3.5	0.4	0.9	2.8	3.5
01Jan2000	02:52	3.5	0.4	0.9	2.8	3.5
01Jan2000	02:53	3.6	0.4	0.9	2.9	3.6
01Jan2000	02:54	3.6	0.4	0.9	2.9	3.6
01Jan2000	02:55	3.6	0.4	0.9	2.9	3.6
01Jan2000	02:56	3.6	0.4	0.9	2.9	3.6
01Jan2000	02:57	3.6	0.4	0.9	3.0	3.6
01Jan2000	02:58	3.7	0.4	0.9	3.0	3.7
01Jan2000	02:59	3.7	0.4	0.9	3.0	3.7
01Jan2000	03:00	3.7	0.4	0.9	3.0	3.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	3.8	0.4	0.9	3.1	3.8
01Jan2000	03:02	3.8	0.4	0.9	3.1	3.8
01Jan2000	03:03	3.8	0.4	0.9	3.1	3.8
01Jan2000	03:04	3.9	0.4	0.9	3.1	3.9
01Jan2000	03:05	4.0	0.4	0.9	3.2	4.0
01Jan2000	03:06	4.0	0.4	0.9	3.2	4.0
01Jan2000	03:07	4.0	0.4	0.9	3.2	4.0
01Jan2000	03:08	4.1	0.4	0.9	3.2	4.1
01Jan2000	03:09	4.2	0.4	0.9	3.3	4.2
01Jan2000	03:10	4.2	0.4	0.9	3.3	4.2
01Jan2000	03:11	4.2	0.4	0.9	3.3	4.2
01Jan2000	03:12	4.3	0.4	0.9	3.4	4.3
01Jan2000	03:13	4.3	0.4	0.9	3.4	4.3
01Jan2000	03:14	4.4	0.4	0.9	3.4	4.4
01Jan2000	03:15	4.4	0.4	0.9	3.4	4.4
01Jan2000	03:16	4.4	0.4	0.9	3.5	4.4
01Jan2000	03:17	4.5	0.4	0.9	3.5	4.5
01Jan2000	03:18	4.5	0.4	0.9	3.5	4.5
01Jan2000	03:19	4.6	0.4	0.9	3.6	4.6
01Jan2000	03:20	4.6	0.4	0.9	3.6	4.6
01Jan2000	03:21	4.7	0.4	0.9	3.6	4.7
01Jan2000	03:22	4.8	0.4	0.9	3.7	4.8
01Jan2000	03:23	4.9	0.4	0.9	3.7	4.9
01Jan2000	03:24	5.0	0.4	0.9	3.7	5.0
01Jan2000	03:25	5.1	0.4	0.9	3.8	5.1
01Jan2000	03:26	5.2	0.4	0.9	3.8	5.2
01Jan2000	03:27	5.3	0.4	1.0	3.8	5.3
01Jan2000	03:28	5.4	0.5	1.0	3.9	5.4
01Jan2000	03:29	5.5	0.5	1.0	3.9	5.5
01Jan2000	03:30	5.6	0.5	1.0	4.0	5.6
01Jan2000	03:31	5.7	0.5	1.0	4.0	5.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	5.8	0.5	1.0	4.1	5.8
01Jan2000	03:33	5.8	0.5	1.0	4.1	5.8
01Jan2000	03:34	5.9	0.5	1.0	4.1	5.9
01Jan2000	03:35	6.0	0.5	1.0	4.2	6.0
01Jan2000	03:36	6.1	0.5	1.0	4.2	6.1
01Jan2000	03:37	6.2	0.5	1.0	4.3	6.2
01Jan2000	03:38	6.2	0.5	1.0	4.3	6.2
01Jan2000	03:39	6.3	0.5	1.0	4.4	6.3
01Jan2000	03:40	6.4	0.5	1.0	4.4	6.4
01Jan2000	03:41	6.7	0.5	1.0	4.5	6.7
01Jan2000	03:42	7.0	0.5	1.0	4.5	7.0
01Jan2000	03:43	7.3	0.5	1.0	4.6	7.3
01Jan2000	03:44	7.6	0.5	1.0	4.7	7.6
01Jan2000	03:45	7.9	0.5	1.1	4.7	7.9
01Jan2000	03:46	8.2	0.5	1.1	4.8	8.2
01Jan2000	03:47	8.5	0.5	1.1	4.9	8.5
01Jan2000	03:48	8.8	0.5	1.1	5.0	8.8
01Jan2000	03:49	9.1	0.5	1.1	5.0	9.1
01Jan2000	03:50	9.4	0.5	1.1	5.1	9.4
01Jan2000	03:51	10.2	0.5	1.1	5.2	10.2
01Jan2000	03:52	11.0	0.5	1.1	5.3	11.0
01Jan2000	03:53	11.8	0.5	1.2	5.4	11.8
01Jan2000	03:54	12.6	0.6	1.2	5.6	12.6
01Jan2000	03:55	13.4	0.6	1.2	5.7	13.4
01Jan2000	03:56	14.1	0.6	1.2	5.9	14.1
01Jan2000	03:57	14.9	0.6	1.2	6.0	14.9
01Jan2000	03:58	15.7	0.6	1.3	6.2	15.7
01Jan2000	03:59	16.5	0.6	1.3	6.3	16.5
01Jan2000	04:00	17.3	0.6	1.3	6.5	17.3
01Jan2000	04:01	19.9	0.6	1.4	6.7	19.9
01Jan2000	04:02	22.5	0.7	1.4	6.9	22.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	25.1	0.7	1.5	7.2	25.1
01Jan2000	04:04	27.7	0.7	1.5	7.4	27.7
01Jan2000	04:05	30.2	0.7	1.6	7.7	30.2
01Jan2000	04:06	32.8	0.8	1.6	8.1	32.8
01Jan2000	04:07	35.4	0.8	1.7	8.4	35.4
01Jan2000	04:08	38.0	0.9	1.8	8.7	38.0
01Jan2000	04:09	40.6	0.9	1.9	9.1	40.6
01Jan2000	04:10	43.2	0.9	2.0	9.5	43.2
01Jan2000	04:11	39.6	1.0	2.1	9.8	39.6
01Jan2000	04:12	36.0	1.0	2.2	10.1	36.0
01Jan2000	04:13	32.5	1.1	2.2	10.4	32.5
01Jan2000	04:14	28.9	1.1	2.3	10.6	28.9
01Jan2000	04:15	25.3	1.1	2.3	10.7	25.3
01Jan2000	04:16	21.8	1.1	2.4	10.9	21.8
01Jan2000	04:17	18.2	1.1	2.4	10.9	18.2
01Jan2000	04:18	14.6	1.1	2.4	11.0	14.6
01Jan2000	04:19	11.1	1.1	2.4	11.0	11.1
01Jan2000	04:20	7.5	1.1	2.4	11.0	7.5
01Jan2000	04:21	7.2	1.1	2.4	11.0	7.2
01Jan2000	04:22	7.0	1.1	2.4	10.9	7.0
01Jan2000	04:23	6.8	1.1	2.4	10.9	6.8
01Jan2000	04:24	6.5	1.1	2.4	10.8	6.5
01Jan2000	04:25	6.2	1.1	2.4	10.8	6.2
01Jan2000	04:26	6.0	1.1	2.4	10.8	6.0
01Jan2000	04:27	5.8	1.1	2.3	10.7	5.8
01Jan2000	04:28	5.5	1.1	2.3	10.7	5.5
01Jan2000	04:29	5.2	1.1	2.3	10.6	5.2
01Jan2000	04:30	5.0	1.1	2.3	10.6	5.0
01Jan2000	04:31	4.9	1.1	2.3	10.5	4.9
01Jan2000	04:32	4.8	1.1	2.3	10.4	4.8
01Jan2000	04:33	4.7	1.1	2.2	10.4	4.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	4.6	1.0	2.2	10.3	4.6
01Jan2000	04:35	4.5	1.0	2.2	10.3	4.5
01Jan2000	04:36	4.3	1.0	2.2	10.2	4.3
01Jan2000	04:37	4.2	1.0	2.2	10.1	4.2
01Jan2000	04:38	4.1	1.0	2.2	10.1	4.1
01Jan2000	04:39	4.0	1.0	2.1	10.0	4.0
01Jan2000	04:40	3.9	1.0	2.1	10.0	3.9
01Jan2000	04:41	3.8	1.0	2.1	9.9	3.8
01Jan2000	04:42	3.8	1.0	2.1	9.8	3.8
01Jan2000	04:43	3.7	1.0	2.1	9.8	3.7
01Jan2000	04:44	3.7	1.0	2.0	9.7	3.7
01Jan2000	04:45	3.6	1.0	2.0	9.6	3.6
01Jan2000	04:46	3.5	0.9	2.0	9.6	3.5
01Jan2000	04:47	3.5	0.9	2.0	9.5	3.5
01Jan2000	04:48	3.4	0.9	2.0	9.4	3.4
01Jan2000	04:49	3.4	0.9	2.0	9.4	3.4
01Jan2000	04:50	3.3	0.9	1.9	9.3	3.3
01Jan2000	04:51	3.3	0.9	1.9	9.2	3.3
01Jan2000	04:52	3.2	0.9	1.9	9.2	3.2
01Jan2000	04:53	3.2	0.9	1.9	9.1	3.2
01Jan2000	04:54	3.1	0.9	1.9	9.0	3.1
01Jan2000	04:55	3.1	0.9	1.9	8.9	3.1
01Jan2000	04:56	3.1	0.9	1.8	8.9	3.1
01Jan2000	04:57	3.0	0.9	1.8	8.8	3.0
01Jan2000	04:58	3.0	0.9	1.8	8.7	3.0
01Jan2000	04:59	2.9	0.8	1.8	8.7	2.9
01Jan2000	05:00	2.9	0.8	1.8	8.6	2.9
01Jan2000	05:01	2.9	0.8	1.8	8.5	2.9
01Jan2000	05:02	2.8	0.8	1.7	8.5	2.8
01Jan2000	05:03	2.8	0.8	1.7	8.4	2.8
01Jan2000	05:04	2.8	0.8	1.7	8.3	2.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	2.8	0.8	1.7	8.2	2.8
01Jan2000	05:06	2.7	0.8	1.7	8.2	2.7
01Jan2000	05:07	2.7	0.8	1.7	8.1	2.7
01Jan2000	05:08	2.7	0.8	1.6	8.0	2.7
01Jan2000	05:09	2.6	0.8	1.6	8.0	2.6
01Jan2000	05:10	2.6	0.8	1.6	7.9	2.6
01Jan2000	05:11	2.6	0.8	1.6	7.8	2.6
01Jan2000	05:12	2.5	0.7	1.6	7.8	2.5
01Jan2000	05:13	2.5	0.7	1.6	7.7	2.5
01Jan2000	05:14	2.5	0.7	1.6	7.6	2.5
01Jan2000	05:15	2.4	0.7	1.5	7.5	2.4
01Jan2000	05:16	2.4	0.7	1.5	7.5	2.4
01Jan2000	05:17	2.4	0.7	1.5	7.4	2.4
01Jan2000	05:18	2.4	0.7	1.5	7.3	2.4
01Jan2000	05:19	2.3	0.7	1.5	7.3	2.3
01Jan2000	05:20	2.3	0.7	1.5	7.2	2.3
01Jan2000	05:21	2.3	0.7	1.4	7.1	2.3
01Jan2000	05:22	2.3	0.7	1.4	7.0	2.3
01Jan2000	05:23	2.2	0.7	1.4	7.0	2.2
01Jan2000	05:24	2.2	0.7	1.4	6.9	2.2
01Jan2000	05:25	2.2	0.7	1.4	6.8	2.2
01Jan2000	05:26	2.2	0.7	1.4	6.8	2.2
01Jan2000	05:27	2.2	0.6	1.4	6.7	2.2
01Jan2000	05:28	2.1	0.6	1.4	6.6	2.1
01Jan2000	05:29	2.1	0.6	1.3	6.5	2.1
01Jan2000	05:30	2.1	0.6	1.3	6.5	2.1
01Jan2000	05:31	2.1	0.6	1.3	6.4	2.1
01Jan2000	05:32	2.1	0.6	1.3	6.3	2.1
01Jan2000	05:33	2.1	0.6	1.3	6.3	2.1
01Jan2000	05:34	2.1	0.6	1.3	6.2	2.1
01Jan2000	05:35	2.0	0.6	1.3	6.1	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	2.0	0.6	1.3	6.0	2.0
01Jan2000	05:37	2.0	0.6	1.2	6.0	2.0
01Jan2000	05:38	2.0	0.6	1.2	5.9	2.0
01Jan2000	05:39	2.0	0.6	1.2	5.8	2.0
01Jan2000	05:40	2.0	0.6	1.2	5.8	2.0
01Jan2000	05:41	2.0	0.6	1.2	5.7	2.0
01Jan2000	05:42	2.0	0.6	1.2	5.6	2.0
01Jan2000	05:43	2.0	0.6	1.2	5.6	2.0
01Jan2000	05:44	2.0	0.5	1.2	5.5	2.0
01Jan2000	05:45	2.0	0.5	1.2	5.4	2.0
01Jan2000	05:46	1.9	0.5	1.1	5.4	1.9
01Jan2000	05:47	1.9	0.5	1.1	5.3	1.9
01Jan2000	05:48	1.9	0.5	1.1	5.2	1.9
01Jan2000	05:49	1.9	0.5	1.1	5.2	1.9
01Jan2000	05:50	1.9	0.5	1.1	5.1	1.9
01Jan2000	05:51	1.9	0.5	1.1	5.0	1.9
01Jan2000	05:52	1.9	0.5	1.1	5.0	1.9
01Jan2000	05:53	1.8	0.5	1.1	4.9	1.8
01Jan2000	05:54	1.8	0.5	1.1	4.8	1.8
01Jan2000	05:55	1.8	0.5	1.1	4.8	1.8
01Jan2000	05:56	1.8	0.5	1.1	4.7	1.8
01Jan2000	05:57	1.8	0.5	1.0	4.6	1.8
01Jan2000	05:58	1.7	0.5	1.0	4.6	1.7
01Jan2000	05:59	1.7	0.5	1.0	4.5	1.7
01Jan2000	06:00	1.7	0.5	1.0	4.4	1.7
01Jan2000	06:01	1.5	0.5	1.0	4.4	1.5
01Jan2000	06:02	1.4	0.5	1.0	4.3	1.4
01Jan2000	06:03	1.2	0.5	1.0	4.2	1.2
01Jan2000	06:04	1.0	0.5	1.0	4.1	1.0
01Jan2000	06:05	0.8	0.5	1.0	4.1	0.8
01Jan2000	06:06	0.7	0.5	1.0	4.0	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.5	0.5	1.0	3.9	0.5
01Jan2000	06:08	0.3	0.4	0.9	3.8	0.3
01Jan2000	06:09	0.2	0.4	0.9	3.7	0.2
01Jan2000	06:10	0.0	0.4	0.9	3.6	0.0

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 21

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fuscoe Engineering
6390 Greenwich Drive, Suite 170
San Diego, CA
92122

***** DESCRIPTION OF STUDY *****

* PROPOSED HYDROLOGY *
* SUB BASIN 21 *
* NO DETENTION *

FILE NAME: P-21.DAT

TIME/DATE OF STUDY: 10:47 08/30/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

 FLOW PROCESS FROM NODE 2145.00 TO NODE 2144.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
 UPSTREAM ELEVATION(FEET) = 1055.00
 DOWNSTREAM ELEVATION(FEET) = 1050.00
 ELEVATION DIFFERENCE(FEET) = 5.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.232
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.268
 SUBAREA RUNOFF(CFS) = 0.31
 TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.31

 FLOW PROCESS FROM NODE 2144.00 TO NODE 2143.00 IS CODE = 53

 >>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1050.00 DOWNSTREAM(FEET) = 1045.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 250.00 CHANNEL SLOPE = 0.0200
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0200 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.31
 FLOW VELOCITY(FEET/SEC) = 0.79 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 5.26 Tc(MIN.) = 12.49
 LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2143.00 = 340.00 FEET.

 FLOW PROCESS FROM NODE 2144.00 TO NODE 2143.00 IS CODE = 81

 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.109
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3066
 SUBAREA AREA(ACRES) = 0.79 SUBAREA RUNOFF(CFS) = 1.21
 TOTAL AREA(ACRES) = 0.9 TOTAL RUNOFF(CFS) = 1.43
 TC(MIN.) = 12.49

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FLOW PROCESS FROM NODE 2143.00 TO NODE 2126.90 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1039.00 DOWNSTREAM(FEET) = 1017.00
FLOW LENGTH(FEET) = 775.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.79
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.43
PIPE TRAVEL TIME(MIN.) = 2.23 Tc(MIN.) = 14.73
LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2126.90 = 1115.00 FEET.

FLOW PROCESS FROM NODE 2126.90 TO NODE 2126.90 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.73
RAINFALL INTENSITY(INCH/HR) = 4.59
TOTAL STREAM AREA(ACRES) = 0.91
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.43

FLOW PROCESS FROM NODE 2129.00 TO NODE 2128.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1042.00
DOWNSTREAM ELEVATION(FEET) = 1040.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.440
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.27
TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 1.27

FLOW PROCESS FROM NODE 2128.00 TO NODE 2127.00 IS CODE = 52

 >>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1040.00 DOWNSTREAM(FEET) = 1027.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 575.00 CHANNEL SLOPE = 0.0226
 CHANNEL FLOW THRU SUBAREA(CFS) = 1.27
 FLOW VELOCITY(FEET/SEC) = 2.36 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 4.06 Tc(MIN.) = 7.50
 LONGEST FLOWPATH FROM NODE 2129.00 TO NODE 2127.00 = 655.00 FEET.

FLOW PROCESS FROM NODE 2128.00 TO NODE 2127.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.100
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
 SUBAREA AREA(ACRES) = 5.35 SUBAREA RUNOFF(CFS) = 30.77
 TOTAL AREA(ACRES) = 5.5 TOTAL RUNOFF(CFS) = 31.75
 TC(MIN.) = 7.50

FLOW PROCESS FROM NODE 2127.00 TO NODE 2126.90 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1021.00 DOWNSTREAM(FEET) = 1017.00
 FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 20.21
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 31.75
 PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 7.54
 LONGEST FLOWPATH FROM NODE 2129.00 TO NODE 2126.90 = 700.00 FEET.

FLOW PROCESS FROM NODE 2126.90 TO NODE 2126.90 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

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TIME OF CONCENTRATION(MIN.) = 7.54
RAINFALL INTENSITY(INCH/HR) = 7.08
TOTAL STREAM AREA(ACRES) = 5.52
PEAK FLOW RATE(CFS) AT CONFLUENCE = 31.75

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	1.43	14.73	4.595	0.91
2	31.75	7.54	7.077	5.52

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.47	7.54	7.077
2	22.03	14.73	4.595

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 32.47 Tc(MIN.) = 7.54
TOTAL AREA(ACRES) = 6.4
LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2126.90 = 1115.00 FEET.

FLOW PROCESS FROM NODE 2126.90 TO NODE 2126.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1017.00 DOWNSTREAM(FEET) = 1014.00
FLOW LENGTH(FEET) = 235.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 21.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.52
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 32.47
PIPE TRAVEL TIME(MIN.) = 0.41 Tc(MIN.) = 7.95
LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2126.50 = 1350.00 FEET.

FLOW PROCESS FROM NODE 2126.50 TO NODE 2126.50 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 7.95

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RAINFALL INTENSITY(INCH/HR) = 6.84
TOTAL STREAM AREA(ACRES) = 6.43
PEAK FLOW RATE(CFS) AT CONFLUENCE = 32.47

FLOW PROCESS FROM NODE 2126.80 TO NODE 2126.70 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
UPSTREAM ELEVATION(FEET) = 1030.00
DOWNSTREAM ELEVATION(FEET) = 1028.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.618
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.34
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 1.34

FLOW PROCESS FROM NODE 2126.70 TO NODE 2126.60 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1028.00 DOWNSTREAM(FEET) = 1025.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 260.00 CHANNEL SLOPE = 0.0115
CHANNEL FLOW THRU SUBAREA(CFS) = 1.34
FLOW VELOCITY(FEET/SEC) = 1.71 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.54 Tc(MIN.) = 6.16
LONGEST FLOWPATH FROM NODE 2126.80 TO NODE 2126.60 = 345.00 FEET.

FLOW PROCESS FROM NODE 2126.70 TO NODE 2126.60 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.061
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.8100
SUBAREA AREA(ACRES) = 1.05 SUBAREA RUNOFF(CFS) = 6.86
TOTAL AREA(ACRES) = 1.2 TOTAL RUNOFF(CFS) = 8.03
TC(MIN.) = 6.16

FLOW PROCESS FROM NODE 2126.60 TO NODE 2126.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1019.00 DOWNSTREAM(FEET) = 1014.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.90
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.03
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 6.21
 LONGEST FLOWPATH FROM NODE 2126.80 TO NODE 2126.50 = 395.00 FEET.

FLOW PROCESS FROM NODE 2126.50 TO NODE 2126.50 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 6.21
 RAINFALL INTENSITY(INCH/HR) = 8.01
 TOTAL STREAM AREA(ACRES) = 1.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.03

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	32.47	7.95	6.839	6.43
2	8.03	6.21	8.014	1.23

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	35.74	6.21	8.014
2	39.33	7.95	6.839

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 39.33 Tc(MIN.) = 7.95
 TOTAL AREA(ACRES) = 7.7

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LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2126.50 = 1350.00 FEET.

FLOW PROCESS FROM NODE 2126.50 TO NODE 2101.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1014.00 DOWNSTREAM(FEET) = 979.00

FLOW LENGTH(FEET) = 1120.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 14.36

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 39.33

PIPE TRAVEL TIME(MIN.) = 1.30 Tc(MIN.) = 9.25

LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2101.00 = 2470.00 FEET.

FLOW PROCESS FROM NODE 2101.00 TO NODE 2101.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

=====

FLOW PROCESS FROM NODE 2134.00 TO NODE 2133.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1055.00

DOWNSTREAM ELEVATION(FEET) = 1050.00

ELEVATION DIFFERENCE(FEET) = 5.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.105

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.00

TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 1.00

FLOW PROCESS FROM NODE 2133.00 TO NODE 2132.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1050.00 DOWNSTREAM ELEVATION(FEET) = 1040.00

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STREET LENGTH(FEET) = 215.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.36
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 5.72
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.78
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.91
STREET FLOW TRAVEL TIME(MIN.) = 0.95 Tc(MIN.) = 3.05
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.57 SUBAREA RUNOFF(CFS) = 4.73
TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 5.73

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.51
FLOW VELOCITY(FEET/SEC.) = 4.20 DEPTH*VELOCITY(FT*FT/SEC.) = 1.16
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2132.00 = 315.00 FEET.

FLOW PROCESS FROM NODE 2132.00 TO NODE 2149.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1034.00 DOWNSTREAM(FEET) = 1017.00
FLOW LENGTH(FEET) = 735.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.98
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.73
PIPE TRAVEL TIME(MIN.) = 1.54 Tc(MIN.) = 4.59
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2149.00 = 1050.00 FEET.

FLOW PROCESS FROM NODE 2149.00 TO NODE 2149.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	4.59
RAINFALL INTENSITY(INCH/HR) =	9.22
TOTAL STREAM AREA(ACRES) =	0.69
PEAK FLOW RATE(CFS) AT CONFLUENCE =	5.73

FLOW PROCESS FROM NODE 2131.00 TO NODE 2130.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.9000
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	80.00
UPSTREAM ELEVATION(FEET) =	1055.00
DOWNSTREAM ELEVATION(FEET) =	1050.00
ELEVATION DIFFERENCE(FEET) =	5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	1.748
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	9.222
NOTE: RAINFALL INTENSITY IS BASED ON T _c = 5-MINUTE.	
SUBAREA RUNOFF(CFS) =	1.24
TOTAL AREA(ACRES) =	0.15
TOTAL RUNOFF(CFS) =	1.24

FLOW PROCESS FROM NODE 2130.00 TO NODE 2149.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	1050.00	DOWNSTREAM ELEVATION(FEET) =	1023.00
STREET LENGTH(FEET) =	510.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.99
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.29
 HALFSTREET FLOOD WIDTH(FEET) = 7.97
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.63
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.32
 STREET FLOW TRAVEL TIME(MIN.) = 1.83 Tc(MIN.) = 3.58
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.493
 SUBAREA AREA(ACRES) = 2.65 SUBAREA RUNOFF(CFS) = 11.49
 TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 12.73

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.41
 FLOW VELOCITY(FEET/SEC.) = 5.30 DEPTH*VELOCITY(FT*FT/SEC.) = 1.77
 LONGEST FLOWPATH FROM NODE 2131.00 TO NODE 2149.00 = 590.00 FEET.

FLOW PROCESS FROM NODE 2149.00 TO NODE 2149.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.58
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 2.80
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.73

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.73	4.59	9.222	0.69
2	12.73	3.58	9.222	2.80

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)

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1	17.20	3.58	9.222
2	18.46	4.59	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 18.46 Tc(MIN.) = 4.59

TOTAL AREA(ACRES) = 3.5

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2149.00 = 1050.00 FEET.

FLOW PROCESS FROM NODE 2149.00 TO NODE 2146.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1017.00 DOWNSTREAM(FEET) = 1013.00

FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 14.48

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 18.46

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 4.68

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2146.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2146.00 TO NODE 2146.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 4.68

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 3.49

PEAK FLOW RATE(CFS) AT CONFLUENCE = 18.46

FLOW PROCESS FROM NODE 2147.40 TO NODE 2147.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1035.00

DOWNSTREAM ELEVATION(FEET) = 1031.00

ELEVATION DIFFERENCE(FEET) = 4.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.173

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.08
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 1.08

FLOW PROCESS FROM NODE 2147.20 TO NODE 2147.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1031.00 DOWNSTREAM ELEVATION(FEET) = 1020.00
STREET LENGTH(FEET) = 270.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.49
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.23
HALFSTREET FLOOD WIDTH(FEET) = 4.99
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.39
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.77
STREET FLOW TRAVEL TIME(MIN.) = 1.33 Tc(MIN.) = 3.50
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.34 SUBAREA RUNOFF(CFS) = 2.82
TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 3.90

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 6.45
FLOW VELOCITY(FEET/SEC.) = 3.65 DEPTH*VELOCITY(FT*FT/SEC.) = 0.93
LONGEST FLOWPATH FROM NODE 2147.40 TO NODE 2147.00 = 365.00 FEET.

FLOW PROCESS FROM NODE 2147.00 TO NODE 2146.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1014.00  DOWNSTREAM(FEET) = 1013.00
FLOW LENGTH(FEET) = 40.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.40
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.90
PIPE TRAVEL TIME(MIN.) = 0.09  Tc(MIN.) = 3.59
LONGEST FLOWPATH FROM NODE 2147.40 TO NODE 2146.00 = 405.00 FEET.
```

FLOW PROCESS FROM NODE 2146.00 TO NODE 2146.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 3.59
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.47
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.90
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.46	4.68	9.222	3.49
2	3.90	3.59	9.222	0.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.36	3.59	9.222
2	22.36	4.68	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.36 Tc(MIN.) = 4.68

TOTAL AREA(ACRES) = 4.0

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2146.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2146.00 TO NODE 2125.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 1013.00 DOWNSTREAM(FEET) = 1006.00
FLOW LENGTH(FEET) = 233.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.17
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 22.36
PIPE TRAVEL TIME(MIN.) = 0.32 Tc(MIN.) = 5.00
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2125.00 = 1358.00 FEET.

```

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*****
FLOW PROCESS FROM NODE 2125.00 TO NODE 2125.00 IS CODE = 1
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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 5.00
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 3.96
PEAK FLOW RATE(CFS) AT CONFLUENCE = 22.36

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*****
FLOW PROCESS FROM NODE 2151.00 TO NODE 2150.00 IS CODE = 21
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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1023.00
DOWNSTREAM ELEVATION(FEET) = 1022.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.646
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.27
TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 1.27

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*****
FLOW PROCESS FROM NODE 2150.00 TO NODE 2125.00 IS CODE = 62
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>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

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=====
UPSTREAM ELEVATION(FEET) = 1022.00  DOWNSTREAM ELEVATION(FEET) = 1012.00
STREET LENGTH(FEET) = 260.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.42
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.64
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.86
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.08
STREET FLOW TRAVEL TIME(MIN.) = 1.12  Tc(MIN.) = 4.77
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.887
SUBAREA AREA(ACRES) = 1.00  SUBAREA RUNOFF(CFS) = 8.30
TOTAL AREA(ACRES) = 1.2  PEAK FLOW RATE(CFS) = 9.57
```

```
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.32  HALFSTREET FLOOD WIDTH(FEET) = 9.90
FLOW VELOCITY(FEET/SEC.) = 4.36  DEPTH*VELOCITY(FT*FT/SEC.) = 1.41
LONGEST FLOWPATH FROM NODE 2151.00 TO NODE 2125.00 = 325.00 FEET.
```

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*****
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```
FLOW PROCESS FROM NODE 2125.00 TO NODE 2125.00 IS CODE = 1
```

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-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 4.77
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.17
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.57
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.36	5.00	9.222	3.96
2	9.57	4.77	9.222	1.17

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	31.93	4.77	9.222
2	31.93	5.00	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 31.93 T_c(MIN.) = 5.00

TOTAL AREA(ACRES) = 5.1

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2125.00 = 1358.00 FEET.

FLOW PROCESS FROM NODE 2125.00 TO NODE 2123.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1006.00 DOWNSTREAM(Feet) = 1004.00

FLOW LENGTH(Feet) = 460.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 33.0 INCH PIPE IS 26.1 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 6.34

ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 31.93

PIPE TRAVEL TIME(MIN.) = 1.21 T_c(MIN.) = 6.20

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2123.60 = 1818.00 FEET.

FLOW PROCESS FROM NODE 2123.60 TO NODE 2123.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 3

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 6.20

RAINFALL INTENSITY(INCH/HR) = 8.02

TOTAL STREAM AREA(ACRES) = 5.13

PEAK FLOW RATE(CFS) AT CONFLUENCE = 31.93

FLOW PROCESS FROM NODE 2137.50 TO NODE 2137.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1043.00

DOWNSTREAM ELEVATION(FEET) = 1040.00

ELEVATION DIFFERENCE(FEET) = 3.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.392

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.83

TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 1.83

FLOW PROCESS FROM NODE 2137.00 TO NODE 2123.60 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1040.00 DOWNSTREAM ELEVATION(FEET) = 1010.00

STREET LENGTH(FEET) = 680.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 9.05

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31

HALFSTREET FLOOD WIDTH(FEET) = 9.37

AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.54

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.42

STREET FLOW TRAVEL TIME(MIN.) = 2.50 Tc(MIN.) = 4.89

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

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AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 1.74 SUBAREA RUNOFF(CFS) = 14.44
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 16.27

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 12.03
FLOW VELOCITY(FEET/SEC.) = 5.19 DEPTH*VELOCITY(FT*FT/SEC.) = 1.91
LONGEST FLOWPATH FROM NODE 2137.50 TO NODE 2123.60 = 775.00 FEET.

FLOW PROCESS FROM NODE 2123.60 TO NODE 2123.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 4.89
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.96
PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.27

FLOW PROCESS FROM NODE 2122.00 TO NODE 2121.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 68.00
UPSTREAM ELEVATION(FEET) = 1013.00
DOWNSTREAM ELEVATION(FEET) = 1012.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.785
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.97
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.97

FLOW PROCESS FROM NODE 2121.00 TO NODE 2123.60 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1012.00 DOWNSTREAM(FEET) = 1010.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 311.00 CHANNEL SLOPE = 0.0064
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

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MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.362

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8100

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.26

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.55

AVERAGE FLOW DEPTH(FEET) = 0.73 TRAVEL TIME(MIN.) = 2.03

Tc(MIN.) = 5.82

SUBAREA AREA(ACRES) = 2.14 SUBAREA RUNOFF(CFS) = 14.49

AREA-AVERAGE RUNOFF COEFFICIENT = 0.810

TOTAL AREA(ACRES) = 2.3 PEAK FLOW RATE(CFS) = 15.37

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.00 FLOW VELOCITY(FEET/SEC.) = 3.06

LONGEST FLOWPATH FROM NODE 2122.00 TO NODE 2123.60 = 379.00 FEET.

FLOW PROCESS FROM NODE 2123.60 TO NODE 2123.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:

TIME OF CONCENTRATION(MIN.) = 5.82

RAINFALL INTENSITY(INCH/HR) = 8.36

TOTAL STREAM AREA(ACRES) = 2.27

PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.37

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	31.93	6.20	8.024	5.13
2	16.27	4.89	9.222	1.96
3	15.37	5.82	8.362	2.27

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	56.96	4.89	9.222
2	60.76	5.82	8.362
3	60.84	6.20	8.024

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

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PEAK FLOW RATE(CFS) = 60.84 Tc(MIN.) = 6.20
TOTAL AREA(ACRES) = 9.4
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2123.60 = 1818.00 FEET.

FLOW PROCESS FROM NODE 2123.60 TO NODE 2118.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1004.00 DOWNSTREAM(FEET) = 995.00
FLOW LENGTH(FEET) = 108.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 22.48
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 60.84
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 6.28
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.60 = 1926.00 FEET.

FLOW PROCESS FROM NODE 2118.60 TO NODE 2118.80 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 995.00 DOWNSTREAM(FEET) = 994.80
CHANNEL LENGTH THRU SUBAREA(FEET) = 65.00 CHANNEL SLOPE = 0.0031
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.709
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 65.96
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.42
AVERAGE FLOW DEPTH(FEET) = 2.45 TRAVEL TIME(MIN.) = 0.32
Tc(MIN.) = 6.60
SUBAREA AREA(ACRES) = 1.64 SUBAREA RUNOFF(CFS) = 10.24
AREA-AVERAGE RUNOFF COEFFICIENT = 0.763
TOTAL AREA(ACRES) = 11.0 PEAK FLOW RATE(CFS) = 64.71

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 2.42 FLOW VELOCITY(FEET/SEC.) = 3.40
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.80 = 1991.00 FEET.

FLOW PROCESS FROM NODE 2118.80 TO NODE 2118.70 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 994.80 DOWNSTREAM(FEET) = 994.50
FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 57.0 INCH PIPE IS 44.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.34
ESTIMATED PIPE DIAMETER(INCH) = 57.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 64.71
PIPE TRAVEL TIME(MIN.) = 1.17 Tc(MIN.) = 7.77
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.70 = 2296.00 FEET.

FLOW PROCESS FROM NODE 2118.70 TO NODE 2118.50 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 994.50 DOWNSTREAM(FEET) = 994.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 195.00 CHANNEL SLOPE = 0.0026
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.417
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8100
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 70.40
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.25
AVERAGE FLOW DEPTH(FEET) = 2.63 TRAVEL TIME(MIN.) = 1.00
Tc(MIN.) = 8.77
SUBAREA AREA(ACRES) = 2.19 SUBAREA RUNOFF(CFS) = 11.38
AREA-AVERAGE RUNOFF COEFFICIENT = 0.771
TOTAL AREA(ACRES) = 13.2 PEAK FLOW RATE(CFS) = 65.24

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 2.54 FLOW VELOCITY(FEET/SEC.) = 3.18
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.50 = 2491.00 FEET.

FLOW PROCESS FROM NODE 2118.50 TO NODE 2118.40 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 994.00 DOWNSTREAM(FEET) = 989.00
FLOW LENGTH(FEET) = 37.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 28.06

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ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 65.24
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 8.79
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.40 = 2528.00 FEET.

FLOW PROCESS FROM NODE 2118.40 TO NODE 2118.40 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<

FLOW PROCESS FROM NODE 2142.00 TO NODE 2141.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1110.00

DOWNSTREAM ELEVATION(FEET) = 1101.00

ELEVATION DIFFERENCE(FEET) = 9.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.731

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.58

TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 1.58

FLOW PROCESS FROM NODE 2141.00 TO NODE 2137.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1101.00 DOWNSTREAM ELEVATION(FEET) = 1060.00

STREET LENGTH(FEET) = 425.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.15
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 8.31
AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.37
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.86
STREET FLOW TRAVEL TIME(MIN.) = 1.11 Tc(MIN.) = 2.84
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.86 SUBAREA RUNOFF(CFS) = 7.14
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 8.71

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.47
FLOW VELOCITY(FEET/SEC.) = 7.18 DEPTH*VELOCITY(FT*FT/SEC.) = 2.41
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2137.00 = 525.00 FEET.

FLOW PROCESS FROM NODE 2137.00 TO NODE 2138.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1054.00 DOWNSTREAM(FEET) = 1037.00
FLOW LENGTH(FEET) = 630.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.41
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.71
PIPE TRAVEL TIME(MIN.) = 1.12 Tc(MIN.) = 3.96
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2138.00 = 1155.00 FEET.

FLOW PROCESS FROM NODE 2138.00 TO NODE 2138.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 3.96
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.05
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.71

FLOW PROCESS FROM NODE 2140.00 TO NODE 2139.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1060.00

DOWNSTREAM ELEVATION(FEET) = 1055.00

ELEVATION DIFFERENCE(FEET) = 5.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.105

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.74

TOTAL AREA(ACRES) = 0.21 TOTAL RUNOFF(CFS) = 1.74

FLOW PROCESS FROM NODE 2139.00 TO NODE 2138.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1055.00 DOWNSTREAM ELEVATION(FEET) = 1043.00

STREET LENGTH(FEET) = 550.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.52

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.34

HALFSTREET FLOOD WIDTH(FEET) = 10.91

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.46

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.19

STREET FLOW TRAVEL TIME(MIN.) = 2.65 Tc(MIN.) = 4.76

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 0.67 SUBAREA RUNOFF(CFS) = 5.56

TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 7.30

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.28

FLOW VELOCITY(FEET/SEC.) = 3.88 DEPTH*VELOCITY(FT*FT/SEC.) = 1.52

LONGEST FLOWPATH FROM NODE 2140.00 TO NODE 2138.00 = 650.00 FEET.

FLOW PROCESS FROM NODE 2138.00 TO NODE 2138.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 4.76

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 0.88

PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.30

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.71	3.96	9.222	1.05
2	7.30	4.76	9.222	0.88

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	14.80	3.96	9.222
2	16.02	4.76	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.02 Tc(MIN.) = 4.76

TOTAL AREA(ACRES) = 1.9

LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2138.00 = 1155.00 FEET.

FLOW PROCESS FROM NODE 2138.00 TO NODE 2136.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1037.00  DOWNSTREAM(FEET) = 1030.00
FLOW LENGTH(FEET) = 230.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.16
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 16.02
PIPE TRAVEL TIME(MIN.) = 0.34  Tc(MIN.) = 5.10
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2136.00 = 1385.00 FEET.
```

```
FLOW PROCESS FROM NODE 2136.00 TO NODE 2107.50 IS CODE = 52
```

>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1030.00  DOWNSTREAM(FEET) = 1029.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 141.00  CHANNEL SLOPE = 0.0035
CHANNEL FLOW THRU SUBAREA(CFS) = 16.02
FLOW VELOCITY(FEET/SEC) = 1.68 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.40  Tc(MIN.) = 6.50
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2107.50 = 1526.00 FEET.
```

```
FLOW PROCESS FROM NODE 2107.50 TO NODE 2107.50 IS CODE = 1
```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.50
RAINFALL INTENSITY(INCH/HR) = 7.79
TOTAL STREAM AREA(ACRES) = 1.93
PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.02
```

```
FLOW PROCESS FROM NODE 2109.00 TO NODE 2108.00 IS CODE = 21
```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1075.00
DOWNSTREAM ELEVATION(FEET) = 1071.00
ELEVATION DIFFERENCE(FEET) = 4.00
```

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.003
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.808
SUBAREA RUNOFF(CFS) = 0.19
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.19

FLOW PROCESS FROM NODE 2108.00 TO NODE 2107.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1071.00 DOWNSTREAM(Feet) = 1055.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 108.00 CHANNEL SLOPE = 0.1481
CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.493

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.54
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 2.95
AVERAGE FLOW DEPTH(Feet) = 0.06 TRAVEL TIME(Min.) = 0.61
Tc(Min.) = 8.61
SUBAREA AREA(ACRES) = 0.43 SUBAREA RUNOFF(CFS) = 0.70
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 0.88

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 0.08 FLOW VELOCITY(Feet/Sec.) = 3.42
LONGEST FLOWPATH FROM NODE 2109.00 TO NODE 2107.00 = 188.00 FEET.

FLOW PROCESS FROM NODE 2107.00 TO NODE 2107.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1055.00 DOWNSTREAM(Feet) = 1029.50
FLOW LENGTH(Feet) = 170.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 1.9 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 9.00
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 0.88
PIPE TRAVEL TIME(Min.) = 0.31 Tc(Min.) = 8.93
LONGEST FLOWPATH FROM NODE 2109.00 TO NODE 2107.50 = 358.00 FEET.

FLOW PROCESS FROM NODE 2107.50 TO NODE 2107.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.93
RAINFALL INTENSITY(INCH/HR) = 6.34
TOTAL STREAM AREA(ACRES) = 0.54
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.88

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.02	6.50	7.789	1.93
2	0.88	8.93	6.345	0.54

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	16.66	6.50	7.789
2	13.92	8.93	6.345

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.66 T_c(MIN.) = 6.50
TOTAL AREA(ACRES) = 2.5
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2107.50 = 1526.00 FEET.

FLOW PROCESS FROM NODE 2107.50 TO NODE 2106.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1029.50 DOWNSTREAM(FEET) = 1029.00
FLOW LENGTH(FEET) = 88.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.12
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 16.66
PIPE TRAVEL TIME(MIN.) = 0.24 T_c(MIN.) = 6.74
LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2106.50 = 1614.00 FEET.

FLOW PROCESS FROM NODE 2106.50 TO NODE 2106.50 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 2116.00 TO NODE 2115.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1175.00

DOWNSTREAM ELEVATION(FEET) = 1160.00

ELEVATION DIFFERENCE(FEET) = 15.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.11

TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.11

FLOW PROCESS FROM NODE 2115.00 TO NODE 2114.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1160.00 DOWNSTREAM(FEET) = 1070.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 650.00 CHANNEL SLOPE = 0.1385

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.178

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.43

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.92

AVERAGE FLOW DEPTH(FEET) = 0.15 TRAVEL TIME(MIN.) = 2.20

Tc(MIN.) = 9.30

SUBAREA AREA(ACRES) = 2.98 SUBAREA RUNOFF(CFS) = 4.60

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 3.0 PEAK FLOW RATE(CFS) = 4.70

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.22 FLOW VELOCITY(FEET/SEC.) = 6.08

LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2114.00 = 750.00 FEET.

```

*****
FLOW PROCESS FROM NODE    2114.00 TO NODE    2110.00 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1064.00  DOWNSTREAM(FEET) = 1038.00
FLOW LENGTH(FEET) = 490.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.21
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.70
PIPE TRAVEL TIME(MIN.) = 0.80  Tc(MIN.) = 10.10
LONGEST FLOWPATH FROM NODE    2116.00 TO NODE    2110.00 = 1240.00 FEET.

*****
FLOW PROCESS FROM NODE    2110.00 TO NODE    2110.00 IS CODE =   1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.10
RAINFALL INTENSITY(INCH/HR) = 5.86
TOTAL STREAM AREA(ACRES) = 3.04
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.70

*****
FLOW PROCESS FROM NODE    2113.00 TO NODE    2112.00 IS CODE =  21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1070.00
DOWNSTREAM ELEVATION(FEET) = 1060.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.10  TOTAL RUNOFF(CFS) = 0.18

*****

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FLOW PROCESS FROM NODE 2112.00 TO NODE 2111.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1060.00 DOWNSTREAM(FEET) = 1045.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 370.00 CHANNEL SLOPE = 0.0405
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.312

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.42
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.25
AVERAGE FLOW DEPTH(FEET) = 0.22 TRAVEL TIME(MIN.) = 1.90
Tc(MIN.) = 9.00
SUBAREA AREA(ACRES) = 2.81 SUBAREA RUNOFF(CFS) = 4.43
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 2.9 PEAK FLOW RATE(CFS) = 4.59

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.32 FLOW VELOCITY(FEET/SEC.) = 4.01
LONGEST FLOWPATH FROM NODE 2113.00 TO NODE 2111.00 = 470.00 FEET.

FLOW PROCESS FROM NODE 2111.00 TO NODE 2110.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1039.00 DOWNSTREAM(FEET) = 1038.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.74
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.59
PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 9.09
LONGEST FLOWPATH FROM NODE 2113.00 TO NODE 2110.00 = 510.00 FEET.

FLOW PROCESS FROM NODE 2110.00 TO NODE 2110.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 9.09
 RAINFALL INTENSITY(INCH/HR) = 6.27
 TOTAL STREAM AREA(ACRES) = 2.91
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.59

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.70	10.10	5.858	3.04
2	4.59	9.09	6.273	2.91

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.81	9.09	6.273
2	8.98	10.10	5.858

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.98 Tc(MIN.) = 10.10
 TOTAL AREA(ACRES) = 5.9
 LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2110.00 = 1240.00 FEET.

FLOW PROCESS FROM NODE 2110.00 TO NODE 2106.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1038.00 DOWNSTREAM(FEET) = 1029.00
 FLOW LENGTH(FEET) = 530.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.93
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.98
 PIPE TRAVEL TIME(MIN.) = 1.11 Tc(MIN.) = 11.22
 LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2106.50 = 1770.00 FEET.

FLOW PROCESS FROM NODE 2106.50 TO NODE 2106.50 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.98	11.22	5.476	5.95

LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2106.50 = 1770.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.66	6.74	7.609	2.47

LONGEST FLOWPATH FROM NODE 2142.00 TO NODE 2106.50 = 1614.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.05	6.74	7.609
2	20.97	11.22	5.476

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.05 Tc(MIN.) = 6.74
 TOTAL AREA(ACRES) = 8.4

 FLOW PROCESS FROM NODE 2106.50 TO NODE 2106.50 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<
 =====

 FLOW PROCESS FROM NODE 2106.50 TO NODE 2104.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 1029.00 DOWNSTREAM(Feet) = 1020.00
 FLOW LENGTH(Feet) = 170.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.2 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 14.78
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 22.05
 PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 6.93
 LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2104.00 = 1940.00 FEET.

 FLOW PROCESS FROM NODE 2104.00 TO NODE 2104.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2

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CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 6.93
RAINFALL INTENSITY(INCH/HR) = 7.47
TOTAL STREAM AREA(ACRES) = 8.42
PEAK FLOW RATE(CFS) AT CONFLUENCE = 22.05

FLOW PROCESS FROM NODE 2106.00 TO NODE 2105.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1037.00
DOWNSTREAM ELEVATION(FEET) = 1035.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 10.083
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.866
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.18

FLOW PROCESS FROM NODE 2105.00 TO NODE 2104.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1035.00 DOWNSTREAM(FEET) = 1025.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 310.00 CHANNEL SLOPE = 0.0323
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.190

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.33
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.45
AVERAGE FLOW DEPTH(FEET) = 0.16 TRAVEL TIME(MIN.) = 2.11
Tc(MIN.) = 12.19
SUBAREA AREA(ACRES) = 1.77 SUBAREA RUNOFF(CFS) = 2.30
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 2.45

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.23 FLOW VELOCITY(FEET/SEC.) = 3.03
LONGEST FLOWPATH FROM NODE 2106.00 TO NODE 2104.00 = 390.00 FEET.

FLOW PROCESS FROM NODE 2104.00 TO NODE 2104.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.19
 RAINFALL INTENSITY(INCH/HR) = 5.19
 TOTAL STREAM AREA(ACRES) = 1.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.45

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.05	6.93	7.472	8.42
2	2.45	12.19	5.190	1.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	23.44	6.93	7.472
2	17.77	12.19	5.190

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 23.44 Tc(MIN.) = 6.93
 TOTAL AREA(ACRES) = 10.3
 LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2104.00 = 1940.00 FEET.

FLOW PROCESS FROM NODE 2104.00 TO NODE 2103.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1025.00 DOWNSTREAM(FEET) = 1015.00
 FLOW LENGTH(FEET) = 27.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 32.12
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 23.44
 PIPE TRAVEL TIME(MIN.) = 0.01 Tc(MIN.) = 6.94

LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2103.00 = 1967.00 FEET.

FLOW PROCESS FROM NODE 2103.00 TO NODE 2103.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	6.94
RAINFALL INTENSITY(INCH/HR) =	7.46
TOTAL STREAM AREA(ACRES) =	10.31
PEAK FLOW RATE(CFS) AT CONFLUENCE =	23.44

FLOW PROCESS FROM NODE 2103.40 TO NODE 2103.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.3500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	100.00
UPSTREAM ELEVATION(FEET) =	1240.00
DOWNSTREAM ELEVATION(FEET) =	1215.00
ELEVATION DIFFERENCE(FEET) =	25.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T _c CALCULATION!	
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.972
SUBAREA RUNOFF(CFS) =	0.36
TOTAL AREA(ACRES) =	0.13
TOTAL RUNOFF(CFS) =	0.36

FLOW PROCESS FROM NODE 2103.20 TO NODE 2103.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1215.00	DOWNSTREAM(FEET) =	1018.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	870.00	CHANNEL SLOPE =	0.2264
CHANNEL BASE(FEET) =	3.00	"Z" FACTOR =	2.000
MANNING'S FACTOR =	0.030	MAXIMUM DEPTH(FEET) =	10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	6.664		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.2900		
S.C.S. CURVE NUMBER (AMC II) =	0		
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =	4.74		
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(VEET/SEC.) =	7.22		

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AVERAGE FLOW DEPTH(Feet) = 0.19 TRAVEL TIME(Min.) = 2.01
 Tc(Min.) = 8.27
 SUBAREA AREA(ACRES) = 4.45 SUBAREA RUNOFF(CFS) = 8.60
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.292
 TOTAL AREA(ACRES) = 4.6 PEAK FLOW RATE(CFS) = 8.90

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(Feet) = 0.28 FLOW VELOCITY(Feet/Sec.) = 8.95
 LONGEST FLOWPATH FROM NODE 2103.40 TO NODE 2103.00 = 970.00 Feet.

FLOW PROCESS FROM NODE 2103.00 TO NODE 2103.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(Min.) = 8.27
 RAINFALL INTENSITY(INCH/HR) = 6.66
 TOTAL STREAM AREA(ACRES) = 4.58
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.90

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	23.44	6.94	7.463	10.31
2	8.90	8.27	6.664	4.58

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (INCH/HOUR)
1	30.91	6.94	7.463
2	29.84	8.27	6.664

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 30.91 Tc(Min.) = 6.94
 TOTAL AREA(ACRES) = 14.9
 LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2103.00 = 1967.00 Feet.

FLOW PROCESS FROM NODE 2103.00 TO NODE 2118.40 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1012.00  DOWNSTREAM(FEET) = 989.00
FLOW LENGTH(FEET) = 205.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.44
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 30.91
PIPE TRAVEL TIME(MIN.) = 0.16  Tc(MIN.) = 7.10
LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2118.40 = 2172.00 FEET.

```

```

*****

```

```

FLOW PROCESS FROM NODE 2118.40 TO NODE 2118.40 IS CODE = 11

```

```

-----
>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
=====

```

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	30.91	7.10	7.354	14.89

LONGEST FLOWPATH FROM NODE 2116.00 TO NODE 2118.40 = 2172.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	65.24	8.79	6.407	13.19

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2118.40 = 2528.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	83.59	7.10	7.354
2	92.17	8.79	6.407

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 92.17 Tc(MIN.) = 8.79
TOTAL AREA(ACRES) = 28.1

```

*****

```

```

FLOW PROCESS FROM NODE 2118.40 TO NODE 2118.40 IS CODE = 12

```

```

-----
>>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

```

```

*****

```

```

FLOW PROCESS FROM NODE 2118.40 TO NODE 2101.00 IS CODE = 31

```

```

-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

```

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 989.00 DOWNSTREAM(FEET) = 977.00
FLOW LENGTH(FEET) = 470.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 27.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.21
ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 92.17
PIPE TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 9.28
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2101.00 = 2998.00 FEET.
```

```
FLOW PROCESS FROM NODE 2101.00 TO NODE 2101.00 IS CODE = 11
```

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	92.17	9.28	6.189	28.08

LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2101.00 = 2998.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	39.33	9.25	6.202	7.66

LONGEST FLOWPATH FROM NODE 2145.00 TO NODE 2101.00 = 2470.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	131.20	9.25	6.202
2	131.42	9.28	6.189

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 131.42 Tc(MIN.) = 9.28
TOTAL AREA(ACRES) = 35.7

```
FLOW PROCESS FROM NODE 2101.00 TO NODE 2101.00 IS CODE = 12
```

>>>>>CLEAR MEMORY BANK # 1 <<<<<

```
FLOW PROCESS FROM NODE 2101.00 TO NODE 2100.00 IS CODE = 31
```

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 977.00 DOWNSTREAM(FEET) = 975.00
FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 42.0 INCH PIPE IS 30.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 17.67
ESTIMATED PIPE DIAMETER(INCH) = 42.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 131.42
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 9.35
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 2100.00 = 3078.00 FEET.
```

FLOW PROCESS FROM NODE 2100.00 TO NODE 21.00 IS CODE = 52

>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 975.00 DOWNSTREAM(FEET) = 950.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 450.00 CHANNEL SLOPE = 0.0556
CHANNEL FLOW THRU SUBAREA(CFS) = 131.42
FLOW VELOCITY(FEET/SEC) = 12.15 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.62 Tc(MIN.) = 9.97
LONGEST FLOWPATH FROM NODE 2134.00 TO NODE 21.00 = 3528.00 FEET.
```

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 35.7 TC(MIN.) = 9.97

PEAK FLOW RATE(CFS) = 131.42

=====

END OF RATIONAL METHOD ANALYSIS

↑

Sub-basin 2107 (Node 2136)

Node to Node		Code	C Factor	Area (ac.)	C x A
2142	2141	2	0.9	0.19	0.17
2141	2137	6	0.9	0.86	0.77
2140	2139	2	0.9	0.21	0.19
2139	2138	6	0.9	0.67	0.60
			Total	1.93	1.74
			Avg C =	0.90	

Detention 2107 (Node 2136)

West Town Center

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 5 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 1.9 ACRES

RUNOFF COEFFICIENT 0.9

PEAK DISCHARGE 16.02 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 5	DISCHARGE (CFS) = 0.4
TIME (MIN) = 10	DISCHARGE (CFS) = 0.4
TIME (MIN) = 15	DISCHARGE (CFS) = 0.4
TIME (MIN) = 20	DISCHARGE (CFS) = 0.4
TIME (MIN) = 25	DISCHARGE (CFS) = 0.4
TIME (MIN) = 30	DISCHARGE (CFS) = 0.4
TIME (MIN) = 35	DISCHARGE (CFS) = 0.4
TIME (MIN) = 40	DISCHARGE (CFS) = 0.4
TIME (MIN) = 45	DISCHARGE (CFS) = 0.4
TIME (MIN) = 50	DISCHARGE (CFS) = 0.4
TIME (MIN) = 55	DISCHARGE (CFS) = 0.4
TIME (MIN) = 60	DISCHARGE (CFS) = 0.4
TIME (MIN) = 65	DISCHARGE (CFS) = 0.4
TIME (MIN) = 70	DISCHARGE (CFS) = 0.4
TIME (MIN) = 75	DISCHARGE (CFS) = 0.4

TIME (MIN) = 80 DISCHARGE (CFS) = 0.5
TIME (MIN) = 85 DISCHARGE (CFS) = 0.5
TIME (MIN) = 90 DISCHARGE (CFS) = 0.5
TIME (MIN) = 95 DISCHARGE (CFS) = 0.5
TIME (MIN) = 100 DISCHARGE (CFS) = 0.5
TIME (MIN) = 105 DISCHARGE (CFS) = 0.5
TIME (MIN) = 110 DISCHARGE (CFS) = 0.5
TIME (MIN) = 115 DISCHARGE (CFS) = 0.5
TIME (MIN) = 120 DISCHARGE (CFS) = 0.5
TIME (MIN) = 125 DISCHARGE (CFS) = 0.6
TIME (MIN) = 130 DISCHARGE (CFS) = 0.6
TIME (MIN) = 135 DISCHARGE (CFS) = 0.6
TIME (MIN) = 140 DISCHARGE (CFS) = 0.6
TIME (MIN) = 145 DISCHARGE (CFS) = 0.6
TIME (MIN) = 150 DISCHARGE (CFS) = 0.6
TIME (MIN) = 155 DISCHARGE (CFS) = 0.7
TIME (MIN) = 160 DISCHARGE (CFS) = 0.7
TIME (MIN) = 165 DISCHARGE (CFS) = 0.7
TIME (MIN) = 170 DISCHARGE (CFS) = 0.8
TIME (MIN) = 175 DISCHARGE (CFS) = 0.8
TIME (MIN) = 180 DISCHARGE (CFS) = 0.8
TIME (MIN) = 185 DISCHARGE (CFS) = 0.9
TIME (MIN) = 190 DISCHARGE (CFS) = 0.9
TIME (MIN) = 195 DISCHARGE (CFS) = 1
TIME (MIN) = 200 DISCHARGE (CFS) = 1
TIME (MIN) = 205 DISCHARGE (CFS) = 1.2
TIME (MIN) = 210 DISCHARGE (CFS) = 1.2
TIME (MIN) = 215 DISCHARGE (CFS) = 1.4
TIME (MIN) = 220 DISCHARGE (CFS) = 1.5

TIME (MIN) = 225 DISCHARGE (CFS) = 1.9
TIME (MIN) = 230 DISCHARGE (CFS) = 2.1
TIME (MIN) = 235 DISCHARGE (CFS) = 3.1
TIME (MIN) = 240 DISCHARGE (CFS) = 4.1
TIME (MIN) = 245 DISCHARGE (CFS) = 16.02
TIME (MIN) = 250 DISCHARGE (CFS) = 2.5
TIME (MIN) = 255 DISCHARGE (CFS) = 1.7
TIME (MIN) = 260 DISCHARGE (CFS) = 1.3
TIME (MIN) = 265 DISCHARGE (CFS) = 1.1
TIME (MIN) = 270 DISCHARGE (CFS) = 1
TIME (MIN) = 275 DISCHARGE (CFS) = 0.9
TIME (MIN) = 280 DISCHARGE (CFS) = 0.8
TIME (MIN) = 285 DISCHARGE (CFS) = 0.7
TIME (MIN) = 290 DISCHARGE (CFS) = 0.7
TIME (MIN) = 295 DISCHARGE (CFS) = 0.6
TIME (MIN) = 300 DISCHARGE (CFS) = 0.6
TIME (MIN) = 305 DISCHARGE (CFS) = 0.6
TIME (MIN) = 310 DISCHARGE (CFS) = 0.5
TIME (MIN) = 315 DISCHARGE (CFS) = 0.5
TIME (MIN) = 320 DISCHARGE (CFS) = 0.5
TIME (MIN) = 325 DISCHARGE (CFS) = 0.5
TIME (MIN) = 330 DISCHARGE (CFS) = 0.4
TIME (MIN) = 335 DISCHARGE (CFS) = 0.4
TIME (MIN) = 340 DISCHARGE (CFS) = 0.4
TIME (MIN) = 345 DISCHARGE (CFS) = 0.4
TIME (MIN) = 350 DISCHARGE (CFS) = 0.4
TIME (MIN) = 355 DISCHARGE (CFS) = 0.4
TIME (MIN) = 360 DISCHARGE (CFS) = 0.4
TIME (MIN) = 365 DISCHARGE (CFS) = 0

Detention 2107.5 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical project structure for 'Detention 2107 Pr'. The 'Basin Models' folder is expanded, showing 'Basin 2107', which contains 'Basin Inflow' (highlighted), 'Discharge Gage', 'Detention Basin 2107', and 'Outlets'. Other folders include 'Meteorologic Models', 'Control Specifications', 'Time-Series Data', 'Discharge Gages' (containing 'Node 2107.5 Inflow' with a date range of '01Jan2000, 00:00 - 01Jan2000, 06:04'), 'Paired Data', and 'Elevation-Storage Functions' (containing 'Basin 2120 Stage-Storage').

Below the project structure are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a 'Source' icon and three sub-tabs: 'Source', 'Inflow', and 'Options'. The 'Inflow' sub-tab is selected, displaying the configuration for the 'Basin Inflow' element.

Basin Name: Basin 2107
Element Name: Basin Inflow

Description:	Node 2107.5	
Downstream:	Detention Basin 2107	
Area (MI ²):	0.003	
Flow Method:	Discharge Gage	

Detention 2107 Pr

Basin Models

Basin 2107

Basin Inflow

Discharge Gage

Detention Basin 2107

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Paired Data

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 2107

Element Name: Detention Basin 2107

Method: Orifice Outlet

Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.33

*Area (FT2) 0.342

*Coefficient: 0.6

Detention 2107 Pr

Basin Models

Basin 2107

Basin Inflow

Detention Basin 2107

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2107.5 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 2107 Stage-Storage

Components

Compute

Results

Time-Series Gage

Time Window

Table

Graph

Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.0
01Jan2000, 00:05	0.4
01Jan2000, 00:10	0.4
01Jan2000, 00:15	0.4
01Jan2000, 00:20	0.4
01Jan2000, 00:25	0.4
01Jan2000, 00:30	0.4
01Jan2000, 00:35	0.4
01Jan2000, 00:40	0.4
01Jan2000, 00:45	0.4
01Jan2000, 00:50	0.4
01Jan2000, 00:55	0.4
01Jan2000, 01:00	0.4
01Jan2000, 01:05	0.4
01Jan2000, 01:10	0.4
01Jan2000, 01:15	0.4
01Jan2000, 01:20	0.5
01Jan2000, 01:25	0.5
01Jan2000, 01:30	0.5
01Jan2000, 01:35	0.5
01Jan2000, 01:40	0.5
01Jan2000, 01:45	0.5
01Jan2000, 01:50	0.5
01Jan2000, 01:55	0.5
01Jan2000, 02:00	0.5

- Detention 2107 Pr
 - Basin Models
 - Basin 2107
 - Basin Inflow
 - Discharge Gage
 - Detention Basin 2107
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Time-Series Data
 - Discharge Gages
 - Node 2107.5 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:04
 - Paired Data
 - Elevation-Storage Functions
 - Basin 2120 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	0.480

Project: Detention 2107 Pr Simulation Run: Run 1
Reservoir: Detention Basin 2107

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 2107
End of Run:	01Jan2000, 06:05	Meteorologic Model:	Sierra
Compute Time:	10Jan2017, 15:03:00	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	16.0 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	2.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:13
Inflow Volume:	0.5 (AC-FT)	Peak Storage:	0.2 (AC-FT)
Discharge Volume:	0.4 (AC-FT)	Peak Elevation:	1.9 (FT)

Observed Hydrograph at Gage Node 2107.5 Inflow

Peak Discharge:	16.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:05
Mean Abs Error:	0.7 (CFS)	RMS Error:	1.6 (CFS)
Volume:	0.5 (AC-FT)	Volume Residual:	-0.1 (AC-FT)
Nash-Sutcliffe:	0.086		

Project: Detention 2107 Pr Simulation Run: Run 1
 Reservoir: Detention Basin 2107

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 2107
 End of Run: 01Jan2000, 06:05 Meteorologic Model: Sierra
 Compute Time: 10Jan2017, 15:03:00 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:02	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:03	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:04	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:05	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:06	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:07	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:08	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:09	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:10	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:11	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:12	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:13	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:14	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:15	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:16	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:17	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:18	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:19	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:20	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:21	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:22	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:23	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:24	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:25	0.4	0.0	0.1	0.0	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:27	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:28	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:29	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:30	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:31	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:32	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:33	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:34	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:35	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:36	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:37	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:38	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:39	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:40	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:41	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:42	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:43	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:44	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:45	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:46	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:47	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:48	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:49	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:50	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:51	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:52	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:53	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:54	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:55	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:56	0.4	0.0	0.2	0.0	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	0.4	0.0	0.3	0.0	0.4
01Jan2000	00:58	0.4	0.0	0.3	0.0	0.4
01Jan2000	00:59	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:00	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:01	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:02	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:03	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:04	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:05	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:06	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:07	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:08	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:09	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:10	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:11	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:12	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:13	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:14	0.4	0.0	0.3	0.0	0.4
01Jan2000	01:15	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:16	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:17	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:18	0.5	0.0	0.3	0.2	0.5
01Jan2000	01:19	0.5	0.0	0.3	0.2	0.5
01Jan2000	01:20	0.5	0.0	0.3	0.2	0.5
01Jan2000	01:21	0.5	0.0	0.4	0.2	0.5
01Jan2000	01:22	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:23	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:24	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:25	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:26	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:27	0.5	0.0	0.4	0.3	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:29	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:30	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:31	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:32	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:33	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:34	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:35	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:36	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:37	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:38	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:39	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:40	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:41	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:42	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:43	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:44	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:45	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:46	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:47	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:48	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:49	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:50	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:51	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:52	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:53	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:54	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:55	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:56	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:57	0.5	0.0	0.4	0.4	0.5
01Jan2000	01:58	0.5	0.0	0.4	0.4	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:00	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:01	0.5	0.0	0.4	0.5	0.5
01Jan2000	02:02	0.5	0.0	0.4	0.5	0.5
01Jan2000	02:03	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:04	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:05	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:06	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:07	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:08	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:09	0.6	0.0	0.4	0.5	0.6
01Jan2000	02:10	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:11	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:12	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:13	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:14	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:15	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:16	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:17	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:18	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:19	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:20	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:21	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:22	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:23	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:24	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:25	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:26	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:27	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:28	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:29	0.6	0.1	0.4	0.5	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:31	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:32	0.6	0.1	0.4	0.5	0.6
01Jan2000	02:33	0.7	0.1	0.4	0.5	0.7
01Jan2000	02:34	0.7	0.1	0.4	0.5	0.7
01Jan2000	02:35	0.7	0.1	0.4	0.6	0.7
01Jan2000	02:36	0.7	0.1	0.4	0.6	0.7
01Jan2000	02:37	0.7	0.1	0.4	0.6	0.7
01Jan2000	02:38	0.7	0.1	0.4	0.6	0.7
01Jan2000	02:39	0.7	0.1	0.4	0.6	0.7
01Jan2000	02:40	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:41	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:42	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:43	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:44	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:45	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:46	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:47	0.7	0.1	0.5	0.6	0.7
01Jan2000	02:48	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:49	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:50	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:51	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:52	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:53	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:54	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:55	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:56	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:57	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:58	0.8	0.1	0.5	0.6	0.8
01Jan2000	02:59	0.8	0.1	0.5	0.6	0.8
01Jan2000	03:00	0.8	0.1	0.5	0.6	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	0.8	0.1	0.5	0.7	0.8
01Jan2000	03:02	0.8	0.1	0.5	0.7	0.8
01Jan2000	03:03	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:04	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:05	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:06	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:07	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:08	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:09	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:10	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:11	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:12	0.9	0.1	0.5	0.7	0.9
01Jan2000	03:13	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:14	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:15	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:16	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:17	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:18	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:19	1.0	0.1	0.5	0.7	1.0
01Jan2000	03:20	1.0	0.1	0.5	0.8	1.0
01Jan2000	03:21	1.0	0.1	0.5	0.8	1.0
01Jan2000	03:22	1.1	0.1	0.5	0.8	1.1
01Jan2000	03:23	1.1	0.1	0.5	0.8	1.1
01Jan2000	03:24	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:25	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:26	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:27	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:28	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:29	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:30	1.2	0.1	0.6	0.8	1.2
01Jan2000	03:31	1.2	0.1	0.6	0.8	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	1.3	0.1	0.6	0.8	1.3
01Jan2000	03:33	1.3	0.1	0.6	0.8	1.3
01Jan2000	03:34	1.4	0.1	0.6	0.9	1.4
01Jan2000	03:35	1.4	0.1	0.6	0.9	1.4
01Jan2000	03:36	1.4	0.1	0.6	0.9	1.4
01Jan2000	03:37	1.4	0.1	0.6	0.9	1.4
01Jan2000	03:38	1.5	0.1	0.6	0.9	1.5
01Jan2000	03:39	1.5	0.1	0.6	0.9	1.5
01Jan2000	03:40	1.5	0.1	0.6	0.9	1.5
01Jan2000	03:41	1.6	0.1	0.6	0.9	1.6
01Jan2000	03:42	1.7	0.1	0.7	0.9	1.7
01Jan2000	03:43	1.7	0.1	0.7	0.9	1.7
01Jan2000	03:44	1.8	0.1	0.7	1.0	1.8
01Jan2000	03:45	1.9	0.1	0.7	1.0	1.9
01Jan2000	03:46	1.9	0.1	0.7	1.0	1.9
01Jan2000	03:47	2.0	0.1	0.7	1.0	2.0
01Jan2000	03:48	2.0	0.1	0.7	1.0	2.0
01Jan2000	03:49	2.1	0.1	0.7	1.0	2.1
01Jan2000	03:50	2.1	0.1	0.7	1.1	2.1
01Jan2000	03:51	2.3	0.1	0.8	1.1	2.3
01Jan2000	03:52	2.5	0.1	0.8	1.1	2.5
01Jan2000	03:53	2.7	0.1	0.8	1.1	2.7
01Jan2000	03:54	2.9	0.1	0.8	1.1	2.9
01Jan2000	03:55	3.1	0.1	0.8	1.2	3.1
01Jan2000	03:56	3.3	0.1	0.8	1.2	3.3
01Jan2000	03:57	3.5	0.1	0.9	1.2	3.5
01Jan2000	03:58	3.7	0.1	0.9	1.2	3.7
01Jan2000	03:59	3.9	0.1	0.9	1.3	3.9
01Jan2000	04:00	4.1	0.1	1.0	1.3	4.1
01Jan2000	04:01	6.5	0.1	1.0	1.4	6.5
01Jan2000	04:02	8.9	0.1	1.1	1.4	8.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	11.2	0.1	1.2	1.5	11.2
01Jan2000	04:04	13.6	0.2	1.3	1.6	13.6
01Jan2000	04:05	16.0	0.2	1.5	1.7	16.0
01Jan2000	04:06	13.3	0.2	1.6	1.9	13.3
01Jan2000	04:07	10.6	0.2	1.7	1.9	10.6
01Jan2000	04:08	7.9	0.2	1.8	2.0	7.9
01Jan2000	04:09	5.2	0.2	1.9	2.0	5.2
01Jan2000	04:10	2.5	0.2	1.9	2.0	2.5
01Jan2000	04:11	2.3	0.2	1.9	2.0	2.3
01Jan2000	04:12	2.2	0.2	1.9	2.0	2.2
01Jan2000	04:13	2.0	0.2	1.9	2.0	2.0
01Jan2000	04:14	1.9	0.2	1.9	2.0	1.9
01Jan2000	04:15	1.7	0.2	1.9	2.0	1.7
01Jan2000	04:16	1.6	0.2	1.9	2.0	1.6
01Jan2000	04:17	1.5	0.2	1.9	2.0	1.5
01Jan2000	04:18	1.5	0.2	1.9	2.0	1.5
01Jan2000	04:19	1.4	0.2	1.9	2.0	1.4
01Jan2000	04:20	1.3	0.2	1.8	2.0	1.3
01Jan2000	04:21	1.3	0.2	1.8	2.0	1.3
01Jan2000	04:22	1.2	0.2	1.8	2.0	1.2
01Jan2000	04:23	1.2	0.2	1.8	2.0	1.2
01Jan2000	04:24	1.1	0.2	1.8	2.0	1.1
01Jan2000	04:25	1.1	0.2	1.8	2.0	1.1
01Jan2000	04:26	1.1	0.2	1.8	2.0	1.1
01Jan2000	04:27	1.1	0.2	1.8	2.0	1.1
01Jan2000	04:28	1.0	0.2	1.8	2.0	1.0
01Jan2000	04:29	1.0	0.2	1.8	2.0	1.0
01Jan2000	04:30	1.0	0.2	1.7	2.0	1.0
01Jan2000	04:31	1.0	0.2	1.7	1.9	1.0
01Jan2000	04:32	1.0	0.2	1.7	1.9	1.0
01Jan2000	04:33	0.9	0.2	1.7	1.9	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	0.9	0.2	1.7	1.9	0.9
01Jan2000	04:35	0.9	0.2	1.7	1.9	0.9
01Jan2000	04:36	0.9	0.2	1.7	1.9	0.9
01Jan2000	04:37	0.9	0.2	1.7	1.9	0.9
01Jan2000	04:38	0.9	0.2	1.7	1.9	0.9
01Jan2000	04:39	0.9	0.2	1.6	1.9	0.9
01Jan2000	04:40	0.9	0.2	1.6	1.9	0.9
01Jan2000	04:41	0.9	0.2	1.6	1.9	0.9
01Jan2000	04:42	0.8	0.2	1.6	1.9	0.8
01Jan2000	04:43	0.8	0.2	1.6	1.9	0.8
01Jan2000	04:44	0.7	0.2	1.6	1.8	0.7
01Jan2000	04:45	0.7	0.2	1.6	1.8	0.7
01Jan2000	04:46	0.7	0.2	1.6	1.8	0.7
01Jan2000	04:47	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:48	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:49	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:50	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:51	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:52	0.7	0.2	1.5	1.8	0.7
01Jan2000	04:53	0.6	0.2	1.5	1.8	0.6
01Jan2000	04:54	0.6	0.2	1.5	1.7	0.6
01Jan2000	04:55	0.6	0.2	1.4	1.7	0.6
01Jan2000	04:56	0.6	0.2	1.4	1.7	0.6
01Jan2000	04:57	0.6	0.2	1.4	1.7	0.6
01Jan2000	04:58	0.6	0.2	1.4	1.7	0.6
01Jan2000	04:59	0.6	0.2	1.4	1.7	0.6
01Jan2000	05:00	0.6	0.2	1.4	1.7	0.6
01Jan2000	05:01	0.6	0.2	1.4	1.7	0.6
01Jan2000	05:02	0.6	0.2	1.4	1.7	0.6
01Jan2000	05:03	0.6	0.2	1.3	1.7	0.6
01Jan2000	05:04	0.6	0.2	1.3	1.6	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	0.6	0.2	1.3	1.6	0.6
01Jan2000	05:06	0.6	0.2	1.3	1.6	0.6
01Jan2000	05:07	0.6	0.2	1.3	1.6	0.6
01Jan2000	05:08	0.5	0.2	1.3	1.6	0.5
01Jan2000	05:09	0.5	0.2	1.3	1.6	0.5
01Jan2000	05:10	0.5	0.2	1.3	1.6	0.5
01Jan2000	05:11	0.5	0.1	1.2	1.6	0.5
01Jan2000	05:12	0.5	0.1	1.2	1.6	0.5
01Jan2000	05:13	0.5	0.1	1.2	1.6	0.5
01Jan2000	05:14	0.5	0.1	1.2	1.5	0.5
01Jan2000	05:15	0.5	0.1	1.2	1.5	0.5
01Jan2000	05:16	0.5	0.1	1.2	1.5	0.5
01Jan2000	05:17	0.5	0.1	1.2	1.5	0.5
01Jan2000	05:18	0.5	0.1	1.2	1.5	0.5
01Jan2000	05:19	0.5	0.1	1.1	1.5	0.5
01Jan2000	05:20	0.5	0.1	1.1	1.5	0.5
01Jan2000	05:21	0.5	0.1	1.1	1.5	0.5
01Jan2000	05:22	0.5	0.1	1.1	1.5	0.5
01Jan2000	05:23	0.5	0.1	1.1	1.4	0.5
01Jan2000	05:24	0.5	0.1	1.1	1.4	0.5
01Jan2000	05:25	0.5	0.1	1.1	1.4	0.5
01Jan2000	05:26	0.5	0.1	1.1	1.4	0.5
01Jan2000	05:27	0.5	0.1	1.1	1.4	0.5
01Jan2000	05:28	0.4	0.1	1.1	1.4	0.4
01Jan2000	05:29	0.4	0.1	1.0	1.4	0.4
01Jan2000	05:30	0.4	0.1	1.0	1.4	0.4
01Jan2000	05:31	0.4	0.1	1.0	1.4	0.4
01Jan2000	05:32	0.4	0.1	1.0	1.4	0.4
01Jan2000	05:33	0.4	0.1	1.0	1.3	0.4
01Jan2000	05:34	0.4	0.1	1.0	1.3	0.4
01Jan2000	05:35	0.4	0.1	1.0	1.3	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	0.4	0.1	1.0	1.3	0.4
01Jan2000	05:37	0.4	0.1	1.0	1.3	0.4
01Jan2000	05:38	0.4	0.1	0.9	1.3	0.4
01Jan2000	05:39	0.4	0.1	0.9	1.3	0.4
01Jan2000	05:40	0.4	0.1	0.9	1.3	0.4
01Jan2000	05:41	0.4	0.1	0.9	1.3	0.4
01Jan2000	05:42	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:43	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:44	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:45	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:46	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:47	0.4	0.1	0.9	1.2	0.4
01Jan2000	05:48	0.4	0.1	0.8	1.2	0.4
01Jan2000	05:49	0.4	0.1	0.8	1.2	0.4
01Jan2000	05:50	0.4	0.1	0.8	1.2	0.4
01Jan2000	05:51	0.4	0.1	0.8	1.2	0.4
01Jan2000	05:52	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:53	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:54	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:55	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:56	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:57	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:58	0.4	0.1	0.8	1.1	0.4
01Jan2000	05:59	0.4	0.1	0.8	1.1	0.4
01Jan2000	06:00	0.4	0.1	0.7	1.1	0.4
01Jan2000	06:01	0.3	0.1	0.7	1.1	0.3
01Jan2000	06:02	0.2	0.1	0.7	1.0	0.2
01Jan2000	06:03	0.2	0.1	0.7	1.0	0.2
01Jan2000	06:04	0.1	0.1	0.7	1.0	0.1
01Jan2000	06:05	0.0	0.1	0.7	1.0	0.0

Basin 2118

Node to Node		Code	C Factor	Area (ac.)	C x A
2134	2133	2	0.9	0.12	0.11
2133	2132	6	0.9	0.57	0.51
2131	2130	2	0.9	0.15	0.14
2130	2149	6	0.47	2.65	1.25
2147.4	2147.2	2	0.9	0.13	0.12
2147.2	2147	6	0.9	0.34	0.31
2151	2150	2	0.81	0.17	0.14
2150	2125	6	0.9	1.00	0.90
2137.5	2137	2	0.9	0.22	0.20
2137	2123.6	6	0.9	1.74	1.57
2122	2121	2	0.81	0.13	0.11
2121	2123.6	5	0.81	2.14	1.73
2118.6	2118.8	5	0.3	1.64	0.49
2118.7	2118.5	5	0.3	1.00	0.30
			Total	12.00	7.86
			C avg =	0.65	

Detention 2118, Southern Town Center

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 9 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 12 ACRES

RUNOFF COEFFICIENT 0.65

PEAK DISCHARGE 60.84 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 9 DISCHARGE (CFS) = 1.7

TIME (MIN) = 18 DISCHARGE (CFS) = 1.7

TIME (MIN) = 27 DISCHARGE (CFS) = 1.7

TIME (MIN) = 36 DISCHARGE (CFS) = 1.7

TIME (MIN) = 45 DISCHARGE (CFS) = 1.8

TIME (MIN) = 54 DISCHARGE (CFS) = 1.9

TIME (MIN) = 63 DISCHARGE (CFS) = 1.9

TIME (MIN) = 72 DISCHARGE (CFS) = 2

TIME (MIN) = 81 DISCHARGE (CFS) = 2

TIME (MIN) = 90 DISCHARGE (CFS) = 2.1

TIME (MIN) = 99 DISCHARGE (CFS) = 2.2

TIME (MIN) = 108 DISCHARGE (CFS) = 2.3

TIME (MIN) = 117 DISCHARGE (CFS) = 2.3

TIME (MIN) = 126 DISCHARGE (CFS) = 2.5

TIME (MIN) = 135 DISCHARGE (CFS) = 2.6

TIME (MIN) = 144 DISCHARGE (CFS) = 2.8

TIME (MIN) = 153 DISCHARGE (CFS) = 2.9
TIME (MIN) = 162 DISCHARGE (CFS) = 3.1
TIME (MIN) = 171 DISCHARGE (CFS) = 3.3
TIME (MIN) = 180 DISCHARGE (CFS) = 3.6
TIME (MIN) = 189 DISCHARGE (CFS) = 3.8
TIME (MIN) = 198 DISCHARGE (CFS) = 4.4
TIME (MIN) = 207 DISCHARGE (CFS) = 4.8
TIME (MIN) = 216 DISCHARGE (CFS) = 5.8
TIME (MIN) = 225 DISCHARGE (CFS) = 6.6
TIME (MIN) = 234 DISCHARGE (CFS) = 9.7
TIME (MIN) = 243 DISCHARGE (CFS) = 2.1
TIME (MIN) = 252 DISCHARGE (CFS) = 60.84
TIME (MIN) = 261 DISCHARGE (CFS) = 7.8
TIME (MIN) = 270 DISCHARGE (CFS) = 5.2
TIME (MIN) = 279 DISCHARGE (CFS) = 4.1
TIME (MIN) = 288 DISCHARGE (CFS) = 3.4
TIME (MIN) = 297 DISCHARGE (CFS) = 3
TIME (MIN) = 306 DISCHARGE (CFS) = 2.7
TIME (MIN) = 315 DISCHARGE (CFS) = 2.4
TIME (MIN) = 324 DISCHARGE (CFS) = 2.2
TIME (MIN) = 333 DISCHARGE (CFS) = 2.1
TIME (MIN) = 342 DISCHARGE (CFS) = 1.9
TIME (MIN) = 351 DISCHARGE (CFS) = 1.8
TIME (MIN) = 360 DISCHARGE (CFS) = 1.7
TIME (MIN) = 369 DISCHARGE (CFS) = 0

Detention Basin 16 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 60.84 cfs

Time of Concentration= 9 minutes

HEC-HMS Time Interval Used= 3 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0		0.0
3		0.6	0.6
6		1.1	1.1
9	1.7		1.7
12		1.7	1.7
15		1.7	1.7
18	1.7		1.7
21		1.7	1.7
24		1.7	1.7
27	1.7		1.7
30		1.7	1.7
33		1.7	1.7
36	1.7		1.7
39		1.7	1.7
42		1.8	1.8
45	1.8		1.8
48		1.8	1.8
51		1.9	1.9
54	1.9		1.9
57		1.9	1.9
60		1.9	1.9
63	1.9		1.9
66		1.9	1.9
69		2.0	2.0
72	2		2.0
75		2.0	2.0
78		2.0	2.0
81	2		2.0
84		2.0	2.0
87		2.1	2.1
90	2.1		2.1
93		2.1	2.1
96		2.2	2.2
99	2.2		2.2
102		2.2	2.2
105		2.3	2.3
108	2.3		2.3
111		2.3	2.3
114		2.3	2.3

117	2.3		2.3
120		2.4	2.4
123		2.4	2.4
126	2.5		2.5
129		2.5	2.5
132		2.6	2.6
135	2.6		2.6
138		2.7	2.7
141		2.7	2.7
144	2.8		2.8
147		2.8	2.8
150		2.9	2.9
153	2.9		2.9
156		3.0	3.0
159		3.0	3.0
162	3.1		3.1
165		3.2	3.2
168		3.2	3.2
171	3.3		3.3
174		3.4	3.4
177		3.5	3.5
180	3.6		3.6
183		3.7	3.7
186		3.7	3.7
189	3.8		3.8
192		4.0	4.0
195		4.2	4.2
198	4.4		4.4
201		4.5	4.5
204		4.7	4.7
207	4.8		4.8
210		5.1	5.1
213		5.5	5.5
216	5.8		5.8
219		6.1	6.1
222		6.3	6.3
225	6.6		6.6
228		7.6	7.6
231		8.7	8.7
234	9.7		9.7
237		18.2	18.2
240		26.8	26.8
243	35.3		35.3
246		43.8	43.8
249		52.3	52.3
252	60.84		60.8
255		43.2	43.2
258		25.5	25.5

261	7.8		7.8
264		6.9	6.9
267		6.1	6.1
270	5.2		5.2
273		4.8	4.8
276		4.5	4.5
279	4.1		4.1
282		3.9	3.9
285		3.6	3.6
288	3.4		3.4
291		3.3	3.3
294		3.1	3.1
297	3		3.0
300		2.9	2.9
303		2.8	2.8
306	2.7		2.7
309		2.6	2.6
312		2.5	2.5
315	2.4		2.4
318		2.3	2.3
321		2.3	2.3
324	2.2		2.2
327		2.2	2.2
330		2.1	2.1
333	2.1		2.1
336		2.0	2.0
339		2.0	2.0
342	1.9		1.9
345		1.9	1.9
348		1.8	1.8
351	1.8		1.8
354		1.8	1.8
357		1.7	1.7
360	1.7		1.7
363		1.1	1.1
366		0.6	0.6
369	0		0.0

Detention 2118.6 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical tree structure of the project:

- Detention 2118
 - Basin Models
 - Basin 21
 - Basin Inflow** (highlighted)
 - Discharge Gage
 - Detention Basin 2118
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Control 1
 - Time-Series Data
 - Discharge Gages
 - Node 2118 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:09
 - Paired Data
 - Elevation-Storage Functions
 - Basin 21 Stage-Storage

Below the tree is a tabbed interface with 'Components', 'Compute', and 'Results' tabs. The 'Components' tab is active, showing a sub-tabbed interface with 'Source', 'Inflow', and 'Options' tabs. The 'Inflow' tab is selected, displaying the configuration for the 'Basin Inflow' element:

Basin Name: Basin 21
Element Name: Basin Inflow

Description:	Node 2118.6	
Downstream:	Detention Basin 2118	
Area (MI2)	0.029	
Flow Method:	Discharge Gage	

Detention 2118

Basin Models

Basin 21

Basin Inflow

Discharge Gage

Detention Basin 2118

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2118 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:09

Paired Data

Elevation-Storage Functions

Basin 21 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 21

Element Name: Detention Basin 2118

Method: Orifice Outlet

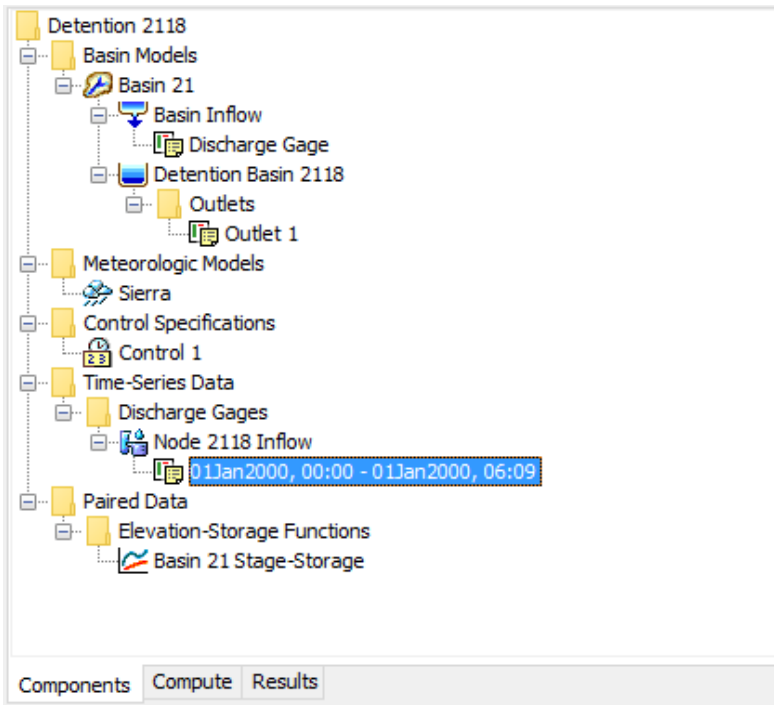
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.75

*Area (FT2) 1.767

*Coefficient: 0.6



Time-Series Gage		Time Window	Table	Graph
Time (ddMMYYYY, HH:mm)		Discharge (CFS)		
01Jan2000, 00:00		0.0		
01Jan2000, 00:03		0.6		
01Jan2000, 00:06		1.1		
01Jan2000, 00:09		1.7		
01Jan2000, 00:12		1.7		
01Jan2000, 00:15		1.7		
01Jan2000, 00:18		1.7		
01Jan2000, 00:21		1.7		
01Jan2000, 00:24		1.7		
01Jan2000, 00:27		1.7		
01Jan2000, 00:30		1.7		
01Jan2000, 00:33		1.7		
01Jan2000, 00:36		1.7		
01Jan2000, 00:39		1.7		
01Jan2000, 00:42		1.8		
01Jan2000, 00:45		1.8		
01Jan2000, 00:48		1.8		
01Jan2000, 00:51		1.9		
01Jan2000, 00:54		1.9		
01Jan2000, 00:57		1.9		
01Jan2000, 01:00		1.9		
01Jan2000, 01:03		1.9		
01Jan2000, 01:06		1.9		
01Jan2000, 01:09		2.0		
01Jan2000, 01:12		2.0		

Detention 2118

Basin Models

Basin 21

Basin Inflow

Discharge Gage

Detention Basin 2118

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2118 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:09

Paired Data

Elevation-Storage Functions

Basin 21 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	2.046

Project: Detention 2118 Simulation Run: Run 1
Reservoir: Detention Basin 2118

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 21
End of Run:	01Jan2000, 06:09	Meteorologic Model:	Sierra
Compute Time:	12Jan2017, 09:48:00	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	60.8 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:12
Peak Discharge:	12.7 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:20
Inflow Volume:	2.7 (AC-FT)	Peak Storage:	1.5 (AC-FT)
Discharge Volume:	2.1 (AC-FT)	Peak Elevation:	3.0 (FT)

Observed Hydrograph at Gage Node 2118 Inflow

Peak Discharge:	60.8 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:12
Mean Abs Error:	4.9 (CFS)	RMS Error:	8.8 (CFS)
Volume:	2.7 (AC-FT)	Volume Residual:	-0.6 (AC-FT)
Nash-Sutcliffe:	0.118		

Project: Detention 2118 Simulation Run: Run 1
Reservoir: Detention Basin 2118

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 21
End of Run: 01Jan2000, 06:09 Meteorologic Model: Sierra
Compute Time: 12Jan2017, 09:48:00 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:02	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:03	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:04	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:05	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:06	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:07	1.3	0.0	0.0	0.0	1.3
01Jan2000	00:08	1.5	0.0	0.0	0.0	1.5
01Jan2000	00:09	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:10	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:11	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:12	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:13	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:14	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:15	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:16	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:17	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:18	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:19	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:20	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:21	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:22	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:23	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:24	1.7	0.0	0.1	0.0	1.7
01Jan2000	00:25	1.7	0.0	0.1	0.0	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:27	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:28	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:29	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:30	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:31	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:32	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:33	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:34	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:35	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:36	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:37	1.7	0.1	0.1	0.0	1.7
01Jan2000	00:38	1.7	0.1	0.2	0.0	1.7
01Jan2000	00:39	1.7	0.1	0.2	0.0	1.7
01Jan2000	00:40	1.7	0.1	0.2	0.0	1.7
01Jan2000	00:41	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:42	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:43	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:44	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:45	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:46	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:47	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:48	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:49	1.8	0.1	0.2	0.0	1.8
01Jan2000	00:50	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:51	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:52	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:53	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:54	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:55	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:56	1.9	0.1	0.2	0.0	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.9	0.1	0.2	0.0	1.9
01Jan2000	00:58	1.9	0.1	0.3	0.0	1.9
01Jan2000	00:59	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:00	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:01	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:02	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:03	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:04	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:05	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:06	1.9	0.1	0.3	0.0	1.9
01Jan2000	01:07	1.9	0.2	0.3	0.0	1.9
01Jan2000	01:08	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:09	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:10	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:11	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:12	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:13	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:14	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:15	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:16	2.0	0.2	0.3	0.0	2.0
01Jan2000	01:17	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:18	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:19	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:20	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:21	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:22	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:23	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:24	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:25	2.0	0.2	0.4	0.0	2.0
01Jan2000	01:26	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:27	2.1	0.2	0.4	0.0	2.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:29	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:30	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:31	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:32	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:33	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:34	2.1	0.2	0.4	0.0	2.1
01Jan2000	01:35	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:36	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:37	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:38	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:39	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:40	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:41	2.2	0.2	0.5	0.0	2.2
01Jan2000	01:42	2.2	0.3	0.5	0.0	2.2
01Jan2000	01:43	2.2	0.3	0.5	0.0	2.2
01Jan2000	01:44	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:45	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:46	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:47	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:48	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:49	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:50	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:51	2.3	0.3	0.5	0.0	2.3
01Jan2000	01:52	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:53	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:54	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:55	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:56	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:57	2.3	0.3	0.6	0.0	2.3
01Jan2000	01:58	2.3	0.3	0.6	0.0	2.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:00	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:01	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:02	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:03	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:04	2.4	0.3	0.6	0.0	2.4
01Jan2000	02:05	2.5	0.3	0.6	0.0	2.5
01Jan2000	02:06	2.5	0.3	0.6	0.0	2.5
01Jan2000	02:07	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:08	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:09	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:10	2.5	0.3	0.7	0.0	2.5
01Jan2000	02:11	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:12	2.6	0.3	0.7	0.0	2.6
01Jan2000	02:13	2.6	0.4	0.7	0.0	2.6
01Jan2000	02:14	2.6	0.4	0.7	0.0	2.6
01Jan2000	02:15	2.6	0.4	0.7	0.0	2.6
01Jan2000	02:16	2.6	0.4	0.7	0.0	2.6
01Jan2000	02:17	2.7	0.4	0.7	0.0	2.7
01Jan2000	02:18	2.7	0.4	0.7	0.0	2.7
01Jan2000	02:19	2.7	0.4	0.7	0.0	2.7
01Jan2000	02:20	2.7	0.4	0.7	0.0	2.7
01Jan2000	02:21	2.7	0.4	0.7	0.0	2.7
01Jan2000	02:22	2.7	0.4	0.8	0.6	2.7
01Jan2000	02:23	2.8	0.4	0.8	0.9	2.8
01Jan2000	02:24	2.8	0.4	0.8	1.1	2.8
01Jan2000	02:25	2.8	0.4	0.8	1.2	2.8
01Jan2000	02:26	2.8	0.4	0.8	1.3	2.8
01Jan2000	02:27	2.8	0.4	0.8	1.4	2.8
01Jan2000	02:28	2.8	0.4	0.8	1.5	2.8
01Jan2000	02:29	2.9	0.4	0.8	1.6	2.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	2.9	0.4	0.8	1.7	2.9
01Jan2000	02:31	2.9	0.4	0.8	1.7	2.9
01Jan2000	02:32	2.9	0.4	0.8	1.8	2.9
01Jan2000	02:33	2.9	0.4	0.8	1.9	2.9
01Jan2000	02:34	2.9	0.4	0.8	1.9	2.9
01Jan2000	02:35	3.0	0.4	0.8	2.0	3.0
01Jan2000	02:36	3.0	0.4	0.8	2.0	3.0
01Jan2000	02:37	3.0	0.4	0.8	2.1	3.0
01Jan2000	02:38	3.0	0.4	0.8	2.1	3.0
01Jan2000	02:39	3.0	0.4	0.8	2.1	3.0
01Jan2000	02:40	3.0	0.4	0.8	2.2	3.0
01Jan2000	02:41	3.1	0.4	0.8	2.2	3.1
01Jan2000	02:42	3.1	0.4	0.8	2.3	3.1
01Jan2000	02:43	3.1	0.4	0.8	2.3	3.1
01Jan2000	02:44	3.2	0.4	0.8	2.3	3.2
01Jan2000	02:45	3.2	0.4	0.8	2.4	3.2
01Jan2000	02:46	3.2	0.4	0.8	2.4	3.2
01Jan2000	02:47	3.2	0.4	0.8	2.4	3.2
01Jan2000	02:48	3.2	0.4	0.8	2.5	3.2
01Jan2000	02:49	3.2	0.4	0.8	2.5	3.2
01Jan2000	02:50	3.3	0.4	0.8	2.5	3.3
01Jan2000	02:51	3.3	0.4	0.8	2.5	3.3
01Jan2000	02:52	3.3	0.4	0.8	2.6	3.3
01Jan2000	02:53	3.4	0.4	0.8	2.6	3.4
01Jan2000	02:54	3.4	0.4	0.8	2.6	3.4
01Jan2000	02:55	3.4	0.4	0.8	2.7	3.4
01Jan2000	02:56	3.5	0.4	0.8	2.7	3.5
01Jan2000	02:57	3.5	0.4	0.9	2.7	3.5
01Jan2000	02:58	3.5	0.4	0.9	2.7	3.5
01Jan2000	02:59	3.6	0.4	0.9	2.8	3.6
01Jan2000	03:00	3.6	0.4	0.9	2.8	3.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	3.6	0.4	0.9	2.8	3.6
01Jan2000	03:02	3.7	0.4	0.9	2.9	3.7
01Jan2000	03:03	3.7	0.4	0.9	2.9	3.7
01Jan2000	03:04	3.7	0.4	0.9	2.9	3.7
01Jan2000	03:05	3.7	0.4	0.9	2.9	3.7
01Jan2000	03:06	3.7	0.4	0.9	3.0	3.7
01Jan2000	03:07	3.7	0.4	0.9	3.0	3.7
01Jan2000	03:08	3.8	0.4	0.9	3.0	3.8
01Jan2000	03:09	3.8	0.4	0.9	3.0	3.8
01Jan2000	03:10	3.9	0.4	0.9	3.1	3.9
01Jan2000	03:11	3.9	0.5	0.9	3.1	3.9
01Jan2000	03:12	4.0	0.5	0.9	3.1	4.0
01Jan2000	03:13	4.1	0.5	0.9	3.1	4.1
01Jan2000	03:14	4.1	0.5	0.9	3.2	4.1
01Jan2000	03:15	4.2	0.5	0.9	3.2	4.2
01Jan2000	03:16	4.3	0.5	0.9	3.2	4.3
01Jan2000	03:17	4.3	0.5	0.9	3.3	4.3
01Jan2000	03:18	4.4	0.5	0.9	3.3	4.4
01Jan2000	03:19	4.4	0.5	0.9	3.3	4.4
01Jan2000	03:20	4.5	0.5	0.9	3.4	4.5
01Jan2000	03:21	4.5	0.5	0.9	3.4	4.5
01Jan2000	03:22	4.6	0.5	0.9	3.4	4.6
01Jan2000	03:23	4.6	0.5	0.9	3.5	4.6
01Jan2000	03:24	4.7	0.5	0.9	3.5	4.7
01Jan2000	03:25	4.7	0.5	0.9	3.5	4.7
01Jan2000	03:26	4.8	0.5	0.9	3.6	4.8
01Jan2000	03:27	4.8	0.5	0.9	3.6	4.8
01Jan2000	03:28	4.9	0.5	0.9	3.6	4.9
01Jan2000	03:29	5.0	0.5	0.9	3.7	5.0
01Jan2000	03:30	5.1	0.5	0.9	3.7	5.1
01Jan2000	03:31	5.2	0.5	0.9	3.7	5.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	5.4	0.5	0.9	3.8	5.4
01Jan2000	03:33	5.5	0.5	1.0	3.8	5.5
01Jan2000	03:34	5.6	0.5	1.0	3.9	5.6
01Jan2000	03:35	5.7	0.5	1.0	3.9	5.7
01Jan2000	03:36	5.8	0.5	1.0	3.9	5.8
01Jan2000	03:37	5.9	0.5	1.0	4.0	5.9
01Jan2000	03:38	6.0	0.5	1.0	4.0	6.0
01Jan2000	03:39	6.1	0.5	1.0	4.1	6.1
01Jan2000	03:40	6.2	0.5	1.0	4.1	6.2
01Jan2000	03:41	6.2	0.5	1.0	4.2	6.2
01Jan2000	03:42	6.3	0.5	1.0	4.2	6.3
01Jan2000	03:43	6.4	0.5	1.0	4.3	6.4
01Jan2000	03:44	6.5	0.5	1.0	4.3	6.5
01Jan2000	03:45	6.6	0.5	1.0	4.4	6.6
01Jan2000	03:46	6.9	0.5	1.0	4.4	6.9
01Jan2000	03:47	7.3	0.5	1.0	4.5	7.3
01Jan2000	03:48	7.6	0.5	1.0	4.6	7.6
01Jan2000	03:49	8.0	0.5	1.0	4.6	8.0
01Jan2000	03:50	8.3	0.5	1.1	4.7	8.3
01Jan2000	03:51	8.7	0.5	1.1	4.8	8.7
01Jan2000	03:52	9.0	0.6	1.1	4.9	9.0
01Jan2000	03:53	9.4	0.6	1.1	4.9	9.4
01Jan2000	03:54	9.7	0.6	1.1	5.0	9.7
01Jan2000	03:55	12.5	0.6	1.1	5.1	12.5
01Jan2000	03:56	15.4	0.6	1.1	5.3	15.4
01Jan2000	03:57	18.2	0.6	1.2	5.5	18.2
01Jan2000	03:58	21.1	0.6	1.2	5.8	21.1
01Jan2000	03:59	23.9	0.6	1.3	6.0	23.9
01Jan2000	04:00	26.8	0.7	1.3	6.3	26.8
01Jan2000	04:01	29.6	0.7	1.4	6.7	29.6
01Jan2000	04:02	32.5	0.7	1.4	7.0	32.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	35.3	0.8	1.5	7.4	35.3
01Jan2000	04:04	38.1	0.8	1.6	7.7	38.1
01Jan2000	04:05	41.0	0.9	1.7	8.1	41.0
01Jan2000	04:06	43.8	0.9	1.8	8.5	43.8
01Jan2000	04:07	46.6	0.9	1.9	8.9	46.6
01Jan2000	04:08	49.5	1.0	2.0	9.3	49.5
01Jan2000	04:09	52.3	1.1	2.1	9.8	52.3
01Jan2000	04:10	55.1	1.1	2.2	10.2	55.1
01Jan2000	04:11	58.0	1.2	2.3	10.6	58.0
01Jan2000	04:12	60.8	1.2	2.4	11.1	60.8
01Jan2000	04:13	54.9	1.3	2.6	11.5	54.9
01Jan2000	04:14	49.1	1.4	2.7	11.8	49.1
01Jan2000	04:15	43.2	1.4	2.8	12.1	43.2
01Jan2000	04:16	37.3	1.5	2.8	12.3	37.3
01Jan2000	04:17	31.4	1.5	2.9	12.5	31.4
01Jan2000	04:18	25.5	1.5	2.9	12.6	25.5
01Jan2000	04:19	19.6	1.5	3.0	12.7	19.6
01Jan2000	04:20	13.7	1.5	3.0	12.7	13.7
01Jan2000	04:21	7.8	1.5	3.0	12.7	7.8
01Jan2000	04:22	7.5	1.5	3.0	12.7	7.5
01Jan2000	04:23	7.2	1.5	2.9	12.6	7.2
01Jan2000	04:24	6.9	1.5	2.9	12.6	6.9
01Jan2000	04:25	6.6	1.5	2.9	12.5	6.6
01Jan2000	04:26	6.4	1.5	2.9	12.5	6.4
01Jan2000	04:27	6.1	1.5	2.9	12.4	6.1
01Jan2000	04:28	5.8	1.5	2.9	12.4	5.8
01Jan2000	04:29	5.5	1.5	2.9	12.3	5.5
01Jan2000	04:30	5.2	1.4	2.8	12.3	5.2
01Jan2000	04:31	5.1	1.4	2.8	12.2	5.1
01Jan2000	04:32	4.9	1.4	2.8	12.2	4.9
01Jan2000	04:33	4.8	1.4	2.8	12.1	4.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	4.7	1.4	2.8	12.0	4.7
01Jan2000	04:35	4.6	1.4	2.7	12.0	4.6
01Jan2000	04:36	4.5	1.4	2.7	11.9	4.5
01Jan2000	04:37	4.4	1.4	2.7	11.9	4.4
01Jan2000	04:38	4.2	1.4	2.7	11.8	4.2
01Jan2000	04:39	4.1	1.4	2.7	11.7	4.1
01Jan2000	04:40	4.0	1.3	2.6	11.7	4.0
01Jan2000	04:41	4.0	1.3	2.6	11.6	4.0
01Jan2000	04:42	3.9	1.3	2.6	11.5	3.9
01Jan2000	04:43	3.8	1.3	2.6	11.5	3.8
01Jan2000	04:44	3.7	1.3	2.6	11.4	3.7
01Jan2000	04:45	3.6	1.3	2.5	11.3	3.6
01Jan2000	04:46	3.5	1.3	2.5	11.3	3.5
01Jan2000	04:47	3.5	1.3	2.5	11.2	3.5
01Jan2000	04:48	3.4	1.3	2.5	11.1	3.4
01Jan2000	04:49	3.4	1.3	2.4	11.1	3.4
01Jan2000	04:50	3.3	1.2	2.4	11.0	3.3
01Jan2000	04:51	3.3	1.2	2.4	10.9	3.3
01Jan2000	04:52	3.2	1.2	2.4	10.9	3.2
01Jan2000	04:53	3.2	1.2	2.4	10.8	3.2
01Jan2000	04:54	3.1	1.2	2.3	10.7	3.1
01Jan2000	04:55	3.1	1.2	2.3	10.7	3.1
01Jan2000	04:56	3.0	1.2	2.3	10.6	3.0
01Jan2000	04:57	3.0	1.2	2.3	10.5	3.0
01Jan2000	04:58	3.0	1.2	2.3	10.5	3.0
01Jan2000	04:59	2.9	1.1	2.2	10.4	2.9
01Jan2000	05:00	2.9	1.1	2.2	10.3	2.9
01Jan2000	05:01	2.9	1.1	2.2	10.2	2.9
01Jan2000	05:02	2.8	1.1	2.2	10.2	2.8
01Jan2000	05:03	2.8	1.1	2.2	10.1	2.8
01Jan2000	05:04	2.8	1.1	2.1	10.0	2.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	2.7	1.1	2.1	10.0	2.7
01Jan2000	05:06	2.7	1.1	2.1	9.9	2.7
01Jan2000	05:07	2.7	1.1	2.1	9.8	2.7
01Jan2000	05:08	2.6	1.1	2.1	9.8	2.6
01Jan2000	05:09	2.6	1.0	2.0	9.7	2.6
01Jan2000	05:10	2.6	1.0	2.0	9.6	2.6
01Jan2000	05:11	2.5	1.0	2.0	9.5	2.5
01Jan2000	05:12	2.5	1.0	2.0	9.5	2.5
01Jan2000	05:13	2.5	1.0	2.0	9.4	2.5
01Jan2000	05:14	2.4	1.0	2.0	9.3	2.4
01Jan2000	05:15	2.4	1.0	1.9	9.3	2.4
01Jan2000	05:16	2.4	1.0	1.9	9.2	2.4
01Jan2000	05:17	2.3	1.0	1.9	9.1	2.3
01Jan2000	05:18	2.3	1.0	1.9	9.0	2.3
01Jan2000	05:19	2.3	1.0	1.9	9.0	2.3
01Jan2000	05:20	2.3	0.9	1.8	8.9	2.3
01Jan2000	05:21	2.3	0.9	1.8	8.8	2.3
01Jan2000	05:22	2.3	0.9	1.8	8.7	2.3
01Jan2000	05:23	2.2	0.9	1.8	8.7	2.2
01Jan2000	05:24	2.2	0.9	1.8	8.6	2.2
01Jan2000	05:25	2.2	0.9	1.8	8.5	2.2
01Jan2000	05:26	2.2	0.9	1.7	8.5	2.2
01Jan2000	05:27	2.2	0.9	1.7	8.4	2.2
01Jan2000	05:28	2.2	0.9	1.7	8.3	2.2
01Jan2000	05:29	2.1	0.9	1.7	8.2	2.1
01Jan2000	05:30	2.1	0.9	1.7	8.2	2.1
01Jan2000	05:31	2.1	0.8	1.7	8.1	2.1
01Jan2000	05:32	2.1	0.8	1.6	8.0	2.1
01Jan2000	05:33	2.1	0.8	1.6	8.0	2.1
01Jan2000	05:34	2.1	0.8	1.6	7.9	2.1
01Jan2000	05:35	2.0	0.8	1.6	7.8	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	2.0	0.8	1.6	7.7	2.0
01Jan2000	05:37	2.0	0.8	1.6	7.7	2.0
01Jan2000	05:38	2.0	0.8	1.5	7.6	2.0
01Jan2000	05:39	2.0	0.8	1.5	7.5	2.0
01Jan2000	05:40	2.0	0.8	1.5	7.5	2.0
01Jan2000	05:41	1.9	0.8	1.5	7.4	1.9
01Jan2000	05:42	1.9	0.8	1.5	7.3	1.9
01Jan2000	05:43	1.9	0.8	1.5	7.2	1.9
01Jan2000	05:44	1.9	0.7	1.5	7.2	1.9
01Jan2000	05:45	1.9	0.7	1.4	7.1	1.9
01Jan2000	05:46	1.9	0.7	1.4	7.0	1.9
01Jan2000	05:47	1.8	0.7	1.4	6.9	1.8
01Jan2000	05:48	1.8	0.7	1.4	6.9	1.8
01Jan2000	05:49	1.8	0.7	1.4	6.8	1.8
01Jan2000	05:50	1.8	0.7	1.4	6.7	1.8
01Jan2000	05:51	1.8	0.7	1.4	6.7	1.8
01Jan2000	05:52	1.8	0.7	1.4	6.6	1.8
01Jan2000	05:53	1.8	0.7	1.3	6.5	1.8
01Jan2000	05:54	1.8	0.7	1.3	6.5	1.8
01Jan2000	05:55	1.8	0.7	1.3	6.4	1.8
01Jan2000	05:56	1.7	0.7	1.3	6.3	1.7
01Jan2000	05:57	1.7	0.7	1.3	6.2	1.7
01Jan2000	05:58	1.7	0.7	1.3	6.2	1.7
01Jan2000	05:59	1.7	0.6	1.3	6.1	1.7
01Jan2000	06:00	1.7	0.6	1.3	6.0	1.7
01Jan2000	06:01	1.5	0.6	1.2	6.0	1.5
01Jan2000	06:02	1.3	0.6	1.2	5.9	1.3
01Jan2000	06:03	1.1	0.6	1.2	5.8	1.1
01Jan2000	06:04	0.9	0.6	1.2	5.7	0.9
01Jan2000	06:05	0.8	0.6	1.2	5.6	0.8
01Jan2000	06:06	0.6	0.6	1.2	5.6	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.4	0.6	1.2	5.5	0.4
01Jan2000	06:08	0.2	0.6	1.1	5.4	0.2
01Jan2000	06:09	0.0	0.6	1.1	5.3	0.0

Basin 2127

Node to Node		Code	C Factor	Area (ac.)	C x A
2129	2128	2	0.81	0.17	0.14
2128	2127	8	0.81	5.35	4.33
			Total	5.52	4.47
			C Avg =	0.81	

PROPOSED HYDROLOGY
BASIN 2127

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 1/20/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 8 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 5.5 ACRES
RUNOFF COEFFICIENT 0.81
PEAK DISCHARGE 31.75 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 8	DISCHARGE (CFS) = 0.9
TIME (MIN) = 16	DISCHARGE (CFS) = 0.9
TIME (MIN) = 24	DISCHARGE (CFS) = 1
TIME (MIN) = 32	DISCHARGE (CFS) = 1
TIME (MIN) = 40	DISCHARGE (CFS) = 1
TIME (MIN) = 48	DISCHARGE (CFS) = 1
TIME (MIN) = 56	DISCHARGE (CFS) = 1.1
TIME (MIN) = 64	DISCHARGE (CFS) = 1.1
TIME (MIN) = 72	DISCHARGE (CFS) = 1.1
TIME (MIN) = 80	DISCHARGE (CFS) = 1.2
TIME (MIN) = 88	DISCHARGE (CFS) = 1.2
TIME (MIN) = 96	DISCHARGE (CFS) = 1.2
TIME (MIN) = 104	DISCHARGE (CFS) = 1.3
TIME (MIN) = 112	DISCHARGE (CFS) = 1.3
TIME (MIN) = 120	DISCHARGE (CFS) = 1.4
TIME (MIN) = 128	DISCHARGE (CFS) = 1.4
TIME (MIN) = 136	DISCHARGE (CFS) = 1.5
TIME (MIN) = 144	DISCHARGE (CFS) = 1.6
TIME (MIN) = 152	DISCHARGE (CFS) = 1.7
TIME (MIN) = 160	DISCHARGE (CFS) = 1.8
TIME (MIN) = 168	DISCHARGE (CFS) = 1.9
TIME (MIN) = 176	DISCHARGE (CFS) = 2
TIME (MIN) = 184	DISCHARGE (CFS) = 2.2
TIME (MIN) = 192	DISCHARGE (CFS) = 2.4
TIME (MIN) = 200	DISCHARGE (CFS) = 2.7
TIME (MIN) = 208	DISCHARGE (CFS) = 2.9
TIME (MIN) = 216	DISCHARGE (CFS) = 3.6
TIME (MIN) = 224	DISCHARGE (CFS) = 4.1
TIME (MIN) = 232	DISCHARGE (CFS) = 6
TIME (MIN) = 240	DISCHARGE (CFS) = 7.1
TIME (MIN) = 248	DISCHARGE (CFS) = 31.75

TIME (MIN) = 256	DISCHARGE (CFS) = 4.8
TIME (MIN) = 264	DISCHARGE (CFS) = 3.2
TIME (MIN) = 272	DISCHARGE (CFS) = 2.5
TIME (MIN) = 280	DISCHARGE (CFS) = 2.1
TIME (MIN) = 288	DISCHARGE (CFS) = 1.8
TIME (MIN) = 296	DISCHARGE (CFS) = 1.6
TIME (MIN) = 304	DISCHARGE (CFS) = 1.5
TIME (MIN) = 312	DISCHARGE (CFS) = 1.4
TIME (MIN) = 320	DISCHARGE (CFS) = 1.3
TIME (MIN) = 328	DISCHARGE (CFS) = 1.2
TIME (MIN) = 336	DISCHARGE (CFS) = 1.1
TIME (MIN) = 344	DISCHARGE (CFS) = 1.1
TIME (MIN) = 352	DISCHARGE (CFS) = 1
TIME (MIN) = 360	DISCHARGE (CFS) = 1
TIME (MIN) = 368	DISCHARGE (CFS) = 0

Detention Basin 2127 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 31.75 cfs

Time of Concentration= 8 minutes

HEC-HMS Time Interval Used= 4 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0		0.0
4		0.5	0.5
8	0.9		0.9
12		0.9	0.9
16	0.9		0.9
20		1.0	1.0
24	1		1.0
28		1.0	1.0
32	1		1.0
36		1.0	1.0
40	1		1.0
44		1.0	1.0
48	1		1.0
52		1.1	1.1
56	1.1		1.1
60		1.1	1.1
64	1.1		1.1
68		1.1	1.1
72	1.1		1.1
76		1.2	1.2
80	1.2		1.2
84		1.2	1.2
88	1.2		1.2
92		1.2	1.2
96	1.2		1.2
100		1.3	1.3
104	1.3		1.3
108		1.3	1.3
112	1.3		1.3
116		1.4	1.4
120	1.4		1.4
124		1.4	1.4
128	1.4		1.4
132		1.5	1.5
136	1.5		1.5
140		1.6	1.6
144	1.6		1.6
148		1.7	1.7
152	1.7		1.7

156		1.8	1.8
160	1.8		1.8
164		1.9	1.9
168	1.9		1.9
172		2.0	2.0
176	2		2.0
180		2.1	2.1
184	2.2		2.2
188		2.3	2.3
192	2.4		2.4
196		2.6	2.6
200	2.7		2.7
204		2.8	2.8
208	2.9		2.9
212		3.3	3.3
216	3.6		3.6
220		3.9	3.9
224	4.1		4.1
228		5.1	5.1
232	6		6.0
236		6.6	6.6
240	7.1		7.1
244		19.4	19.4
248	31.75		31.8
252		18.3	18.3
256	4.8		4.8
260		4.0	4.0
264	3.2		3.2
268		2.9	2.9
272	2.5		2.5
276		2.3	2.3
280	2.1		2.1
284		2.0	2.0
288	1.8		1.8
292		1.7	1.7
296	1.6		1.6
300		1.6	1.6
304	1.5		1.5
308		1.5	1.5
312	1.4		1.4
316		1.4	1.4
320	1.3		1.3
324		1.3	1.3
328	1.2		1.2
332		1.2	1.2
336	1.1		1.1
340		1.1	1.1
344	1.1		1.1

348		1.1	1.1
352	1		1.0
356		1.0	1.0
360	1		1.0
364		0.5	0.5
368	0		0.0

Detention 2127 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are tabs for 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a sub-tab for 'Source'. The 'Source' sub-tab is selected, displaying the configuration for 'Basin 21 Inflow'.

Basin Name: Basin 21
Element Name: Basin Inflow

Description:	Node 2118.6	
Downstream:	Detention Basin 2127	
Area (MI2)	0.029	
Flow Method:	Discharge Gage	

Detention 2127 Pr

Basin Models

Basin 21

Basin Inflow

Discharge Gage

Detention Basin 2127

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 2127 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:08

Paired Data

Elevation-Storage Functions

Basin 2127 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 21

Element Name: Detention Basin 2127

Method: Orifice Outlet

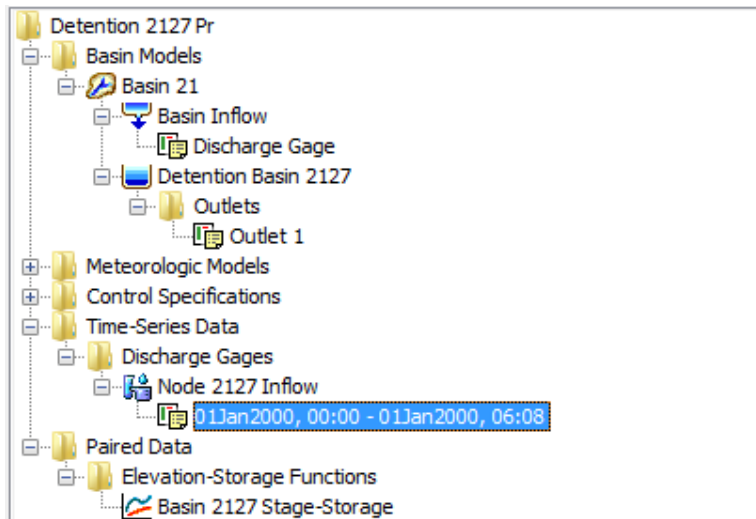
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.25

*Area (FT2) 0.196

*Coefficient: 0.6



Components Compute Results

Time-Series Gage Time Window Table Graph

Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.0
01Jan2000, 00:04	0.5
01Jan2000, 00:08	0.9
01Jan2000, 00:12	0.9
01Jan2000, 00:16	0.9
01Jan2000, 00:20	1.0
01Jan2000, 00:24	1.0
01Jan2000, 00:28	1.0
01Jan2000, 00:32	1.0
01Jan2000, 00:36	1.0
01Jan2000, 00:40	1.0
01Jan2000, 00:44	1.0
01Jan2000, 00:48	1.0
01Jan2000, 00:52	1.1
01Jan2000, 00:56	1.1
01Jan2000, 01:00	1.1
01Jan2000, 01:04	1.1
01Jan2000, 01:08	1.1
01Jan2000, 01:12	1.1
01Jan2000, 01:16	1.2
01Jan2000, 01:20	1.2
01Jan2000, 01:24	1.2
01Jan2000, 01:28	1.2
01Jan2000, 01:32	1.2
01Jan2000, 01:36	1.2
01Jan2000, 01:40	1.3
01Jan2000, 01:44	1.3

Detention 2127 Pr

Basin Models

Basin 21

Basin Inflow

Discharge Gage

Detention Basin 2127

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 2127 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:08

Paired Data

Elevation-Storage Functions

Basin 2127 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	0.918
5.0	1.150

Project: Detention 2127 Pr Simulation Run: Run 1
Reservoir: Detention Basin 2127

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 21
End of Run:	01Jan2000, 06:08	Meteorologic Model:	Sierra
Compute Time:	12Jan2017, 09:57:31	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	31.8 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:08
Peak Discharge:	1.8 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:49
Inflow Volume:	1.3 (AC-FT)	Peak Storage:	0.9 (AC-FT)
Discharge Volume:	0.5 (AC-FT)	Peak Elevation:	3.8 (FT)

Observed Hydrograph at Gage Node 2127 Inflow

Peak Discharge:	31.8 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:08
Mean Abs Error:	1.8 (CFS)	RMS Error:	4.2 (CFS)
Volume:	1.3 (AC-FT)	Volume Residual:	-0.8 (AC-FT)
Nash-Sutcliffe:	-0.112		

Project: Detention 2127 Pr Simulation Run: Run 1
Reservoir: Detention Basin 2127

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 21
End of Run: 01Jan2000, 06:08 Meteorologic Model: Sierra
Compute Time: 12Jan2017, 09:57:31 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:02	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:03	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:04	0.5	0.0	0.0	0.0	0.5
01Jan2000	00:05	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:06	0.7	0.0	0.0	0.0	0.7
01Jan2000	00:07	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:08	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:09	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:10	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:11	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:12	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:13	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:14	0.9	0.0	0.1	0.0	0.9
01Jan2000	00:15	0.9	0.0	0.1	0.0	0.9
01Jan2000	00:16	0.9	0.0	0.1	0.0	0.9
01Jan2000	00:17	0.9	0.0	0.1	0.0	0.9
01Jan2000	00:18	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:19	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:20	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:21	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:22	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:23	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:24	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:25	1.0	0.0	0.1	0.0	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:27	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:28	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:29	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:30	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:31	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:32	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:33	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:34	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:35	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:36	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:37	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:38	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:39	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:40	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:41	1.0	0.0	0.2	0.0	1.0
01Jan2000	00:42	1.0	0.1	0.2	0.0	1.0
01Jan2000	00:43	1.0	0.1	0.2	0.0	1.0
01Jan2000	00:44	1.0	0.1	0.2	0.0	1.0
01Jan2000	00:45	1.0	0.1	0.2	0.0	1.0
01Jan2000	00:46	1.0	0.1	0.2	0.0	1.0
01Jan2000	00:47	1.0	0.1	0.3	0.0	1.0
01Jan2000	00:48	1.0	0.1	0.3	0.1	1.0
01Jan2000	00:49	1.0	0.1	0.3	0.1	1.0
01Jan2000	00:50	1.0	0.1	0.3	0.1	1.0
01Jan2000	00:51	1.1	0.1	0.3	0.1	1.1
01Jan2000	00:52	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:53	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:54	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:55	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:56	1.1	0.1	0.3	0.2	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:58	1.1	0.1	0.3	0.2	1.1
01Jan2000	00:59	1.1	0.1	0.3	0.2	1.1
01Jan2000	01:00	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:01	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:02	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:03	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:04	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:05	1.1	0.1	0.3	0.3	1.1
01Jan2000	01:06	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:07	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:08	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:09	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:10	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:11	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:12	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:13	1.1	0.1	0.4	0.3	1.1
01Jan2000	01:14	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:15	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:16	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:17	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:18	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:19	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:20	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:21	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:22	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:23	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:24	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:25	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:26	1.2	0.1	0.4	0.4	1.2
01Jan2000	01:27	1.2	0.1	0.5	0.4	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	1.2	0.1	0.5	0.4	1.2
01Jan2000	01:29	1.2	0.1	0.5	0.4	1.2
01Jan2000	01:30	1.2	0.1	0.5	0.4	1.2
01Jan2000	01:31	1.2	0.1	0.5	0.4	1.2
01Jan2000	01:32	1.2	0.1	0.5	0.4	1.2
01Jan2000	01:33	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:34	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:35	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:36	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:37	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:38	1.2	0.1	0.5	0.5	1.2
01Jan2000	01:39	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:40	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:41	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:42	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:43	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:44	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:45	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:46	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:47	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:48	1.3	0.1	0.5	0.5	1.3
01Jan2000	01:49	1.3	0.1	0.6	0.5	1.3
01Jan2000	01:50	1.3	0.1	0.6	0.5	1.3
01Jan2000	01:51	1.3	0.1	0.6	0.5	1.3
01Jan2000	01:52	1.3	0.1	0.6	0.5	1.3
01Jan2000	01:53	1.3	0.1	0.6	0.5	1.3
01Jan2000	01:54	1.4	0.1	0.6	0.5	1.4
01Jan2000	01:55	1.4	0.1	0.6	0.5	1.4
01Jan2000	01:56	1.4	0.1	0.6	0.5	1.4
01Jan2000	01:57	1.4	0.1	0.6	0.6	1.4
01Jan2000	01:58	1.4	0.1	0.6	0.6	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:00	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:01	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:02	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:03	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:04	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:05	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:06	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:07	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:08	1.4	0.1	0.6	0.6	1.4
01Jan2000	02:09	1.4	0.1	0.7	0.6	1.4
01Jan2000	02:10	1.4	0.2	0.7	0.6	1.4
01Jan2000	02:11	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:12	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:13	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:14	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:15	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:16	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:17	1.5	0.2	0.7	0.6	1.5
01Jan2000	02:18	1.6	0.2	0.7	0.6	1.6
01Jan2000	02:19	1.6	0.2	0.7	0.6	1.6
01Jan2000	02:20	1.6	0.2	0.7	0.6	1.6
01Jan2000	02:21	1.6	0.2	0.7	0.6	1.6
01Jan2000	02:22	1.6	0.2	0.7	0.6	1.6
01Jan2000	02:23	1.6	0.2	0.7	0.7	1.6
01Jan2000	02:24	1.6	0.2	0.7	0.7	1.6
01Jan2000	02:25	1.6	0.2	0.7	0.7	1.6
01Jan2000	02:26	1.6	0.2	0.7	0.7	1.6
01Jan2000	02:27	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:28	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:29	1.7	0.2	0.8	0.7	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:31	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:32	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:33	1.7	0.2	0.8	0.7	1.7
01Jan2000	02:34	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:35	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:36	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:37	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:38	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:39	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:40	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:41	1.8	0.2	0.8	0.7	1.8
01Jan2000	02:42	1.9	0.2	0.8	0.7	1.9
01Jan2000	02:43	1.9	0.2	0.9	0.7	1.9
01Jan2000	02:44	1.9	0.2	0.9	0.7	1.9
01Jan2000	02:45	1.9	0.2	0.9	0.7	1.9
01Jan2000	02:46	1.9	0.2	0.9	0.7	1.9
01Jan2000	02:47	1.9	0.2	0.9	0.7	1.9
01Jan2000	02:48	1.9	0.2	0.9	0.8	1.9
01Jan2000	02:49	1.9	0.2	0.9	0.8	1.9
01Jan2000	02:50	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:51	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:52	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:53	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:54	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:55	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:56	2.0	0.2	0.9	0.8	2.0
01Jan2000	02:57	2.0	0.2	1.0	0.8	2.0
01Jan2000	02:58	2.0	0.2	1.0	0.8	2.0
01Jan2000	02:59	2.1	0.2	1.0	0.8	2.1
01Jan2000	03:00	2.1	0.2	1.0	0.8	2.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	2.1	0.2	1.0	0.8	2.1
01Jan2000	03:02	2.2	0.2	1.0	0.8	2.2
01Jan2000	03:03	2.2	0.2	1.0	0.8	2.2
01Jan2000	03:04	2.2	0.2	1.0	0.8	2.2
01Jan2000	03:05	2.2	0.2	1.0	0.8	2.2
01Jan2000	03:06	2.2	0.2	1.0	0.8	2.2
01Jan2000	03:07	2.3	0.2	1.0	0.8	2.3
01Jan2000	03:08	2.3	0.2	1.0	0.8	2.3
01Jan2000	03:09	2.3	0.2	1.1	0.8	2.3
01Jan2000	03:10	2.3	0.2	1.1	0.8	2.3
01Jan2000	03:11	2.4	0.2	1.1	0.9	2.4
01Jan2000	03:12	2.4	0.2	1.1	0.9	2.4
01Jan2000	03:13	2.4	0.2	1.1	0.9	2.4
01Jan2000	03:14	2.5	0.3	1.1	0.9	2.5
01Jan2000	03:15	2.6	0.3	1.1	0.9	2.6
01Jan2000	03:16	2.6	0.3	1.1	0.9	2.6
01Jan2000	03:17	2.6	0.3	1.1	0.9	2.6
01Jan2000	03:18	2.7	0.3	1.1	0.9	2.7
01Jan2000	03:19	2.7	0.3	1.1	0.9	2.7
01Jan2000	03:20	2.7	0.3	1.2	0.9	2.7
01Jan2000	03:21	2.7	0.3	1.2	0.9	2.7
01Jan2000	03:22	2.8	0.3	1.2	0.9	2.8
01Jan2000	03:23	2.8	0.3	1.2	0.9	2.8
01Jan2000	03:24	2.8	0.3	1.2	0.9	2.8
01Jan2000	03:25	2.8	0.3	1.2	0.9	2.8
01Jan2000	03:26	2.8	0.3	1.2	0.9	2.8
01Jan2000	03:27	2.9	0.3	1.2	0.9	2.9
01Jan2000	03:28	2.9	0.3	1.2	0.9	2.9
01Jan2000	03:29	3.0	0.3	1.3	0.9	3.0
01Jan2000	03:30	3.1	0.3	1.3	1.0	3.1
01Jan2000	03:31	3.2	0.3	1.3	1.0	3.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	3.3	0.3	1.3	1.0	3.3
01Jan2000	03:33	3.4	0.3	1.3	1.0	3.4
01Jan2000	03:34	3.4	0.3	1.3	1.0	3.4
01Jan2000	03:35	3.5	0.3	1.3	1.0	3.5
01Jan2000	03:36	3.6	0.3	1.4	1.0	3.6
01Jan2000	03:37	3.7	0.3	1.4	1.0	3.7
01Jan2000	03:38	3.8	0.3	1.4	1.0	3.8
01Jan2000	03:39	3.8	0.3	1.4	1.0	3.8
01Jan2000	03:40	3.9	0.3	1.4	1.0	3.9
01Jan2000	03:41	3.9	0.3	1.4	1.0	3.9
01Jan2000	03:42	4.0	0.3	1.5	1.0	4.0
01Jan2000	03:43	4.0	0.3	1.5	1.0	4.0
01Jan2000	03:44	4.1	0.3	1.5	1.1	4.1
01Jan2000	03:45	4.4	0.3	1.5	1.1	4.4
01Jan2000	03:46	4.6	0.4	1.5	1.1	4.6
01Jan2000	03:47	4.8	0.4	1.6	1.1	4.8
01Jan2000	03:48	5.1	0.4	1.6	1.1	5.1
01Jan2000	03:49	5.3	0.4	1.6	1.1	5.3
01Jan2000	03:50	5.6	0.4	1.6	1.1	5.6
01Jan2000	03:51	5.8	0.4	1.7	1.1	5.8
01Jan2000	03:52	6.0	0.4	1.7	1.1	6.0
01Jan2000	03:53	6.2	0.4	1.7	1.1	6.2
01Jan2000	03:54	6.3	0.4	1.7	1.2	6.3
01Jan2000	03:55	6.4	0.4	1.8	1.2	6.4
01Jan2000	03:56	6.6	0.4	1.8	1.2	6.6
01Jan2000	03:57	6.7	0.4	1.8	1.2	6.7
01Jan2000	03:58	6.8	0.4	1.9	1.2	6.8
01Jan2000	03:59	7.0	0.4	1.9	1.2	7.0
01Jan2000	04:00	7.1	0.4	1.9	1.2	7.1
01Jan2000	04:01	10.2	0.5	2.0	1.2	10.2
01Jan2000	04:02	13.2	0.5	2.1	1.3	13.2

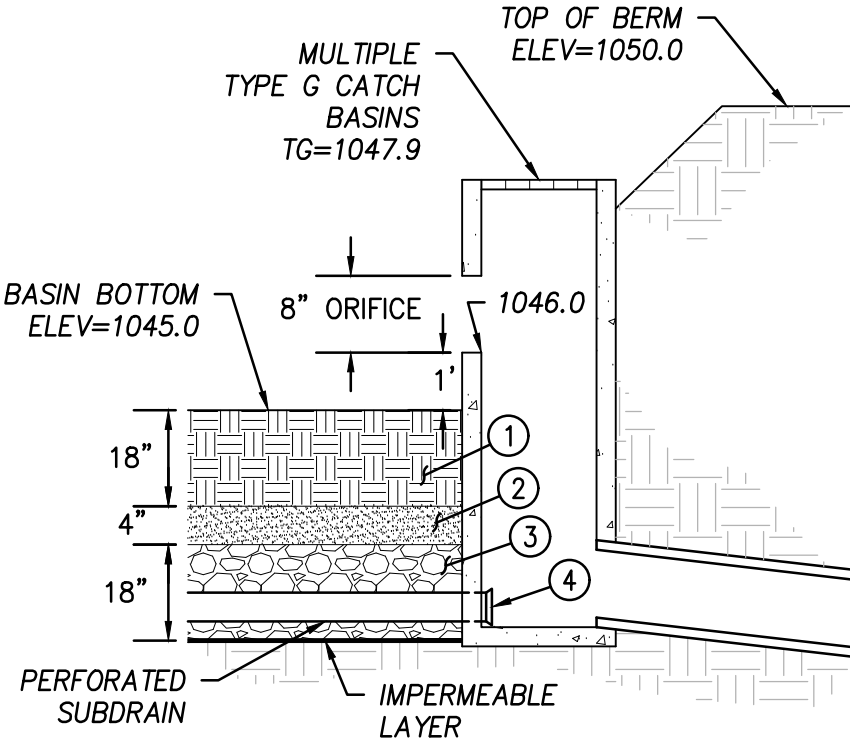
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	16.3	0.5	2.1	1.3	16.3
01Jan2000	04:04	19.4	0.5	2.2	1.3	19.4
01Jan2000	04:05	22.5	0.5	2.4	1.4	22.5
01Jan2000	04:06	25.6	0.6	2.5	1.4	25.6
01Jan2000	04:07	28.7	0.6	2.6	1.5	28.7
01Jan2000	04:08	31.8	0.6	2.8	1.5	31.8
01Jan2000	04:09	28.4	0.7	3.0	1.6	28.4
01Jan2000	04:10	25.0	0.7	3.1	1.6	25.0
01Jan2000	04:11	21.7	0.8	3.3	1.6	21.7
01Jan2000	04:12	18.3	0.8	3.4	1.7	18.3
01Jan2000	04:13	14.9	0.8	3.5	1.7	14.9
01Jan2000	04:14	11.6	0.8	3.5	1.7	11.6
01Jan2000	04:15	8.2	0.8	3.6	1.7	8.2
01Jan2000	04:16	4.8	0.8	3.6	1.7	4.8
01Jan2000	04:17	4.6	0.8	3.6	1.7	4.6
01Jan2000	04:18	4.4	0.8	3.6	1.7	4.4
01Jan2000	04:19	4.2	0.8	3.7	1.7	4.2
01Jan2000	04:20	4.0	0.8	3.7	1.7	4.0
01Jan2000	04:21	3.8	0.8	3.7	1.8	3.8
01Jan2000	04:22	3.6	0.9	3.7	1.8	3.6
01Jan2000	04:23	3.4	0.9	3.7	1.8	3.4
01Jan2000	04:24	3.2	0.9	3.7	1.8	3.2
01Jan2000	04:25	3.1	0.9	3.7	1.8	3.1
01Jan2000	04:26	3.0	0.9	3.7	1.8	3.0
01Jan2000	04:27	3.0	0.9	3.7	1.8	3.0
01Jan2000	04:28	2.9	0.9	3.8	1.8	2.9
01Jan2000	04:29	2.8	0.9	3.8	1.8	2.8
01Jan2000	04:30	2.7	0.9	3.8	1.8	2.7
01Jan2000	04:31	2.6	0.9	3.8	1.8	2.6
01Jan2000	04:32	2.5	0.9	3.8	1.8	2.5
01Jan2000	04:33	2.4	0.9	3.8	1.8	2.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	2.4	0.9	3.8	1.8	2.4
01Jan2000	04:35	2.3	0.9	3.8	1.8	2.3
01Jan2000	04:36	2.3	0.9	3.8	1.8	2.3
01Jan2000	04:37	2.2	0.9	3.8	1.8	2.2
01Jan2000	04:38	2.2	0.9	3.8	1.8	2.2
01Jan2000	04:39	2.2	0.9	3.8	1.8	2.2
01Jan2000	04:40	2.1	0.9	3.8	1.8	2.1
01Jan2000	04:41	2.1	0.9	3.8	1.8	2.1
01Jan2000	04:42	2.0	0.9	3.8	1.8	2.0
01Jan2000	04:43	2.0	0.9	3.8	1.8	2.0
01Jan2000	04:44	2.0	0.9	3.8	1.8	2.0
01Jan2000	04:45	2.0	0.9	3.8	1.8	2.0
01Jan2000	04:46	1.9	0.9	3.8	1.8	1.9
01Jan2000	04:47	1.9	0.9	3.8	1.8	1.9
01Jan2000	04:48	1.8	0.9	3.8	1.8	1.8
01Jan2000	04:49	1.8	0.9	3.8	1.8	1.8
01Jan2000	04:50	1.8	0.9	3.8	1.8	1.8
01Jan2000	04:51	1.7	0.9	3.8	1.8	1.7
01Jan2000	04:52	1.7	0.9	3.8	1.8	1.7
01Jan2000	04:53	1.7	0.9	3.8	1.8	1.7
01Jan2000	04:54	1.6	0.9	3.8	1.8	1.6
01Jan2000	04:55	1.6	0.9	3.8	1.8	1.6
01Jan2000	04:56	1.6	0.9	3.8	1.8	1.6
01Jan2000	04:57	1.6	0.9	3.8	1.8	1.6
01Jan2000	04:58	1.6	0.9	3.8	1.8	1.6
01Jan2000	04:59	1.6	0.9	3.8	1.8	1.6
01Jan2000	05:00	1.6	0.9	3.8	1.8	1.6
01Jan2000	05:01	1.6	0.9	3.8	1.8	1.6
01Jan2000	05:02	1.6	0.9	3.8	1.8	1.6
01Jan2000	05:03	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:04	1.5	0.9	3.8	1.8	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:06	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:07	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:08	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:09	1.5	0.9	3.8	1.8	1.5
01Jan2000	05:10	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:11	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:12	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:13	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:14	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:15	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:16	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:17	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:18	1.4	0.9	3.8	1.8	1.4
01Jan2000	05:19	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:20	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:21	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:22	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:23	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:24	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:25	1.3	0.9	3.8	1.8	1.3
01Jan2000	05:26	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:27	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:28	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:29	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:30	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:31	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:32	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:33	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:34	1.2	0.9	3.7	1.8	1.2
01Jan2000	05:35	1.1	0.9	3.7	1.8	1.1

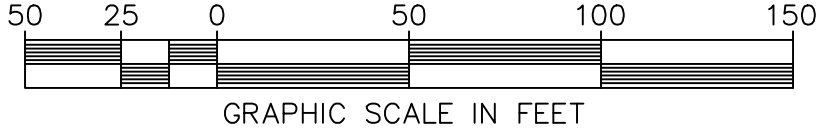
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	1.1	0.9	3.7	1.8	1.1
01Jan2000	05:37	1.1	0.9	3.7	1.8	1.1
01Jan2000	05:38	1.1	0.9	3.7	1.8	1.1
01Jan2000	05:39	1.1	0.8	3.7	1.8	1.1
01Jan2000	05:40	1.1	0.8	3.7	1.8	1.1
01Jan2000	05:41	1.1	0.8	3.7	1.8	1.1
01Jan2000	05:42	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:43	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:44	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:45	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:46	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:47	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:48	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:49	1.1	0.8	3.7	1.7	1.1
01Jan2000	05:50	1.0	0.8	3.7	1.7	1.0
01Jan2000	05:51	1.0	0.8	3.7	1.7	1.0
01Jan2000	05:52	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:53	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:54	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:55	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:56	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:57	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:58	1.0	0.8	3.6	1.7	1.0
01Jan2000	05:59	1.0	0.8	3.6	1.7	1.0
01Jan2000	06:00	1.0	0.8	3.6	1.7	1.0
01Jan2000	06:01	0.9	0.8	3.6	1.7	0.9
01Jan2000	06:02	0.7	0.8	3.6	1.7	0.7
01Jan2000	06:03	0.6	0.8	3.6	1.7	0.6
01Jan2000	06:04	0.5	0.8	3.6	1.7	0.5
01Jan2000	06:05	0.4	0.8	3.6	1.7	0.4
01Jan2000	06:06	0.2	0.8	3.6	1.7	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.1	0.8	3.6	1.7	0.1
01Jan2000	06:08	0.0	0.8	3.6	1.7	0.0



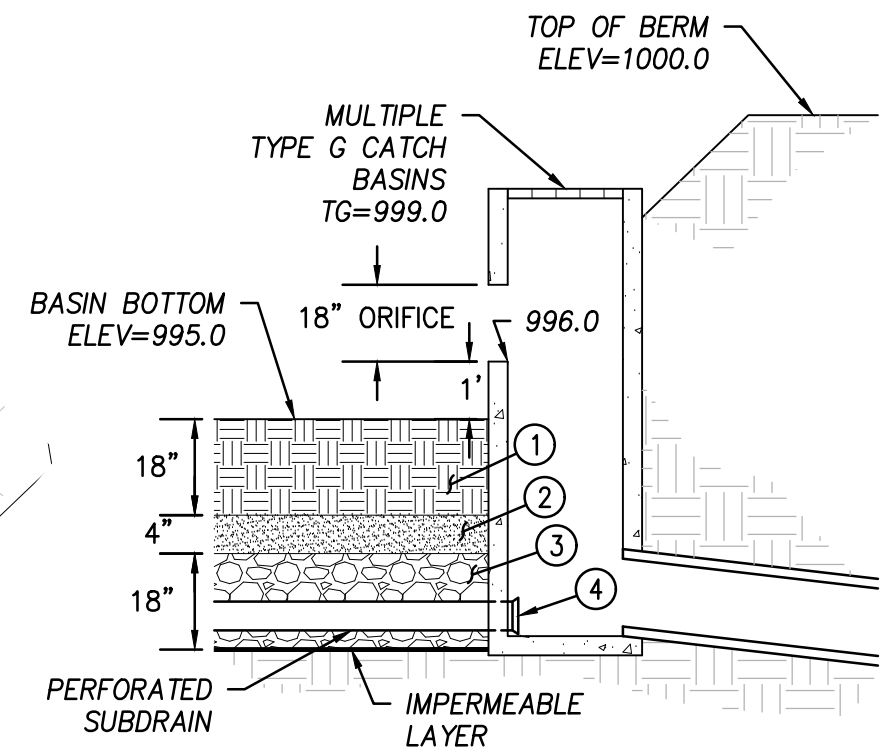
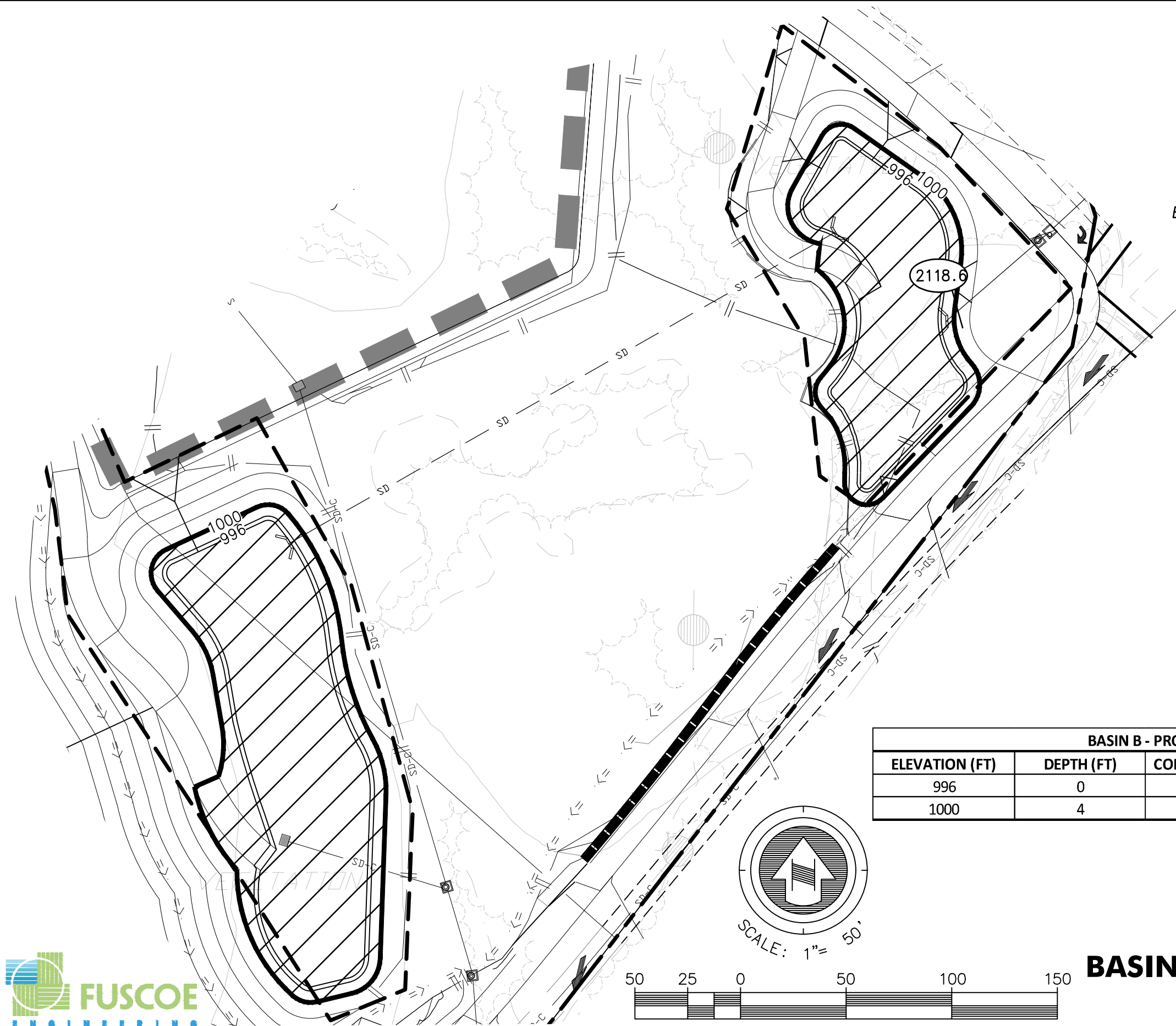
- CONSTRUCTION NOTES:**
- ① 18" BIORETENTION SOIL MEDIA
 - ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
 - ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
 - ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE



BASIN B - PROPOSED DETENTION 2107.5 (TCR2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1046	0	4056	0.09	0.000
1050	4	6407	0.15	0.480

NEWLAND SIERRA **BASIN B - PROPOSED DETENTION BASINS** **TOWN CENTER BASIN** **DETENTION 2107.5 (TCR2)**



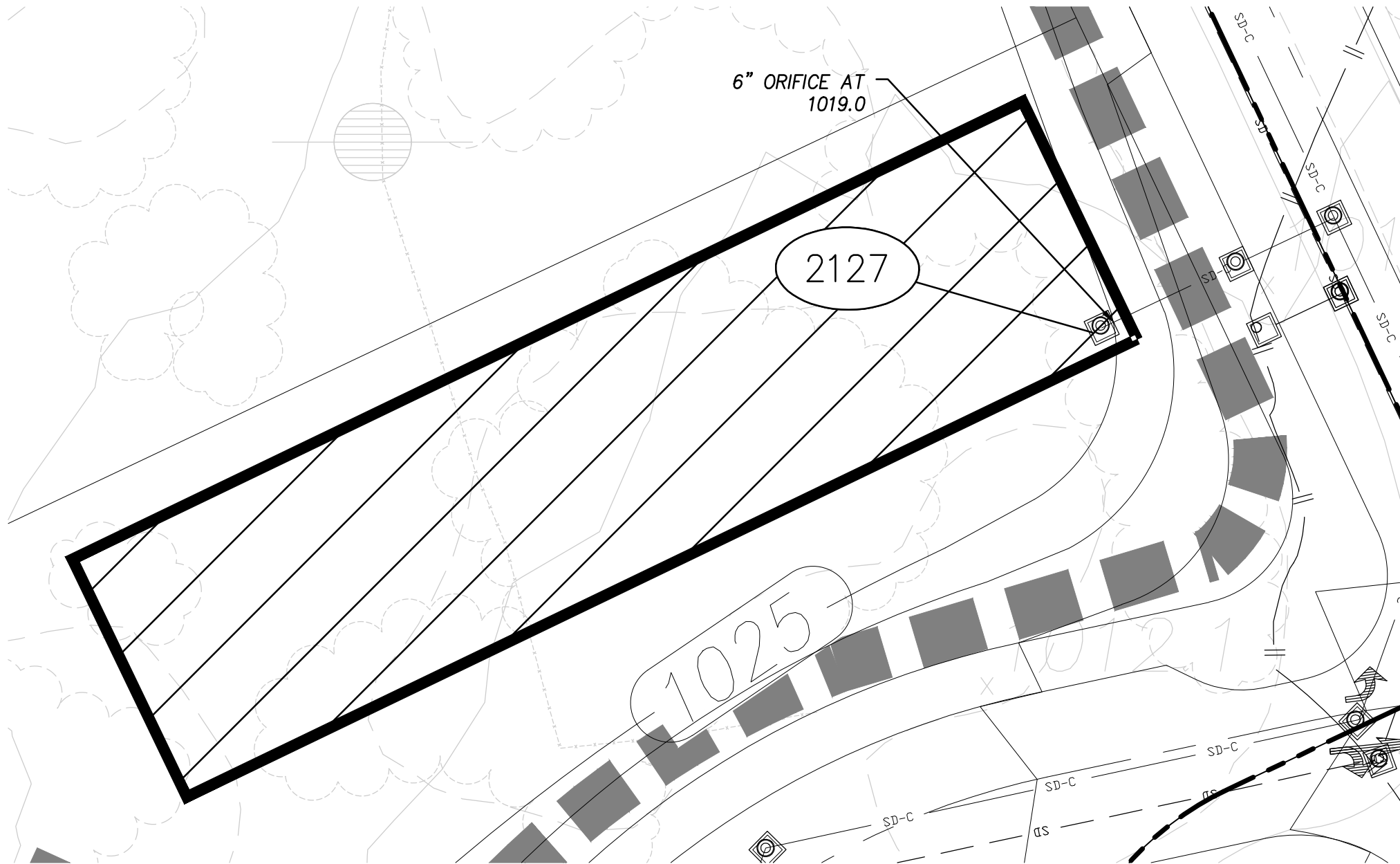
CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN B - PROPOSED DETENTION 2118 (TCR3)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
996	0	18945	0.43	0.000
1000	4	25620	0.59	2.046

**NEWLAND SIERRA
BASIN B - PROPOSED DETENTION BASINS
TOWN CENTER BASIN
DETENTION 2118.6 (BMP TCR3)**



SCALE: 1"= 50'



GRAPHIC SCALE IN FEET

BASIN B - PROPOSED DETENTION 2127 (BMP TC4)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1019	0	10000	0.23	0.000
1023	4	10000	0.23	0.918
1024	5	10000	0.23	1.148

NEWLAND SIERRA **BASIN B - PROPOSED DETENTION BASINS** **TOWN CENTER BASIN** **DETENTION 2127 (BMP TC4)**

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 22

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
298	297	2	1003.2	1001	75	0.9	0.11				
297	296	6	1001	982.5	440	0.9	0.38	1 SIDE			
296	292	3	976.5	976	35						
292	292	1						1 OF 2			
295	294	2	1003.2	1001	75	0.9	0.10				
294	293	6	1001	978	430	0.9	0.55	1 SIDE			
293	292	3	972	971.5	40						
292	292	1						2 OF 2			
292	288	3	971.5	929	595						
288	288	1						1 OF 2			
291	290	2	994	987	100	0.9	0.09				
290	289	6	987	936	680	0.9	1.36	1 SIDE			
289	288	3	930	929	28						
288	288	1						2 OF 2			
288	285	3	929	890	595						
285	285	1						1 OF 2			
287	286	2	947	937	100	0.9	0.11				
286	285	6	937	896	585	0.9	1.26	2 SIDES			
285	285	1						2 OF 2			
285	281	3	890	851	595						
281	281	1						1 OF 2			
284	283	2	898	891	90	0.9	0.16				
283	282	6	891	857	530	0.9	1.04	2 SIDES			
282	281	3	851.5	851	25						
281	281	1						2 OF 2			
281	277	3	851	840	250						
277	277	1						1 OF 2			
280	279	2	858	853	100	0.9	0.09				
279	278	6	853	846.6	185	0.9	0.21	1 SIDE			
278	277	3	840.5	840	38						
277	277	1						2 OF 2			
277	275	3	840	837	237						

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
275	275	1						1 OF 2			
280	276	2	858	853	100	0.9	0.09				
276	275	6	853	840.1	390	0.9	0.40	1 SIDE			
275	275	1						2 OF 2			
275	274	3	837	836.5	20						
274	273	5	836.5	835	150			VALLEY			
274	273	8				0.3	0.40				
273	272	3	835	834	65						
272	272	10						SAVE TO BANK 1			
2203	2202	2	1445	1405	100	0.35	0.08				
2202	2201	5	1405	890	1382			MTN			
2202	2201	8				0.45	18.06				
2201	2200	5	890	835	428			MTN			
2201	2200	8				0.43	2.14				
2200	2200	1						1 OF 2			
2207	2206	2	1295	1270	100	0.35	0.15				
2206	2205	5	1270	1070	475			MTN			
2206	2205	8				0.46	4.44				
2205	2200	5	1070	840.1	930			MTN			
2205	2200	8				0.45	10.76				
2200	2200	1						2 OF 2			
2200	272	3	840.1	834	13						
272	272	11						ADD BANK 1			
272	22	3	834	820	100						
							41.98				

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY *
* NO DETENTION *
* SUB-BASIN 22 *

FILE NAME: P-22.DAT

TIME/DATE OF STUDY: 16:21 11/17/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	39.0	20.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.50 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 298.00 TO NODE 297.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00

UPSTREAM ELEVATION(FEET) = 1003.20

DOWNSTREAM ELEVATION(FEET) = 1001.00

ELEVATION DIFFERENCE(FEET) = 2.20

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.178

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.91

TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.91

FLOW PROCESS FROM NODE 297.00 TO NODE 296.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1001.00 DOWNSTREAM ELEVATION(FEET) = 982.50

STREET LENGTH(FEET) = 440.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.49

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.27

HALFSTREET FLOOD WIDTH(FEET) = 7.21

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.90

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.06

STREET FLOW TRAVEL TIME(MIN.) = 1.88 Tc(MIN.) = 4.06

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.38 SUBAREA RUNOFF(CFS) = 3.15
TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 4.07

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.05
FLOW VELOCITY(FEET/SEC.) = 4.34 DEPTH*VELOCITY(FT*FT/SEC.) = 1.33
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 296.00 = 515.00 FEET.

FLOW PROCESS FROM NODE 296.00 TO NODE 292.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	976.50	DOWNSTREAM(FEET) =	976.00
FLOW LENGTH(FEET) =	35.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000			
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.3 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.10		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	4.07		
PIPE TRAVEL TIME(MIN.) =	0.10	Tc(MIN.) =	4.15
LONGEST FLOWPATH FROM NODE	298.00	TO NODE	292.00 = 550.00 FEET.

FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =		2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:		
TIME OF CONCENTRATION(MIN.) =	4.15	
RAINFALL INTENSITY(INCH/HR) =	9.22	
TOTAL STREAM AREA(ACRES) =	0.49	
PEAK FLOW RATE(CFS) AT CONFLUENCE =	4.07	

FLOW PROCESS FROM NODE 295.00 TO NODE 294.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.9000
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	75.00

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UPSTREAM ELEVATION(FEET) = 1003.20
DOWNSTREAM ELEVATION(FEET) = 1001.00
ELEVATION DIFFERENCE(FEET) = 2.20
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.178
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.83
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.83

FLOW PROCESS FROM NODE 294.00 TO NODE 293.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1001.00 DOWNSTREAM ELEVATION(FEET) = 978.00
STREET LENGTH(FEET) = 430.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.11
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.55
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.52
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.25
STREET FLOW TRAVEL TIME(MIN.) = 1.58 Tc(MIN.) = 3.76
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.55 SUBAREA RUNOFF(CFS) = 4.56
TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 5.39

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.67
FLOW VELOCITY(FEET/SEC.) = 5.12 DEPTH*VELOCITY(FT*FT/SEC.) = 1.64
LONGEST FLOWPATH FROM NODE 295.00 TO NODE 293.00 = 505.00 FEET.

FLOW PROCESS FROM NODE 293.00 TO NODE 292.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 972.00 DOWNSTREAM(FEET) = 971.50
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.25
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.39
 PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 3.87
 LONGEST FLOWPATH FROM NODE 295.00 TO NODE 292.00 = 545.00 FEET.

FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.87
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 0.65
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.39

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.07	4.15	9.222	0.49
2	5.39	3.87	9.222	0.65

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.18	3.87	9.222
2	9.46	4.15	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.46 Tc(MIN.) = 4.15
 TOTAL AREA(ACRES) = 1.1

LONGEST FLOWPATH FROM NODE 298.00 TO NODE 292.00 = 550.00 FEET.

FLOW PROCESS FROM NODE 292.00 TO NODE 288.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 971.50 DOWNSTREAM(FEET) = 929.00
 FLOW LENGTH(FEET) = 595.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.79
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 9.46
 PIPE TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 4.87
 LONGEST FLOWPATH FROM NODE 298.00 TO NODE 288.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 4.87
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 1.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.46

FLOW PROCESS FROM NODE 291.00 TO NODE 290.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 994.00
 DOWNSTREAM ELEVATION(FEET) = 987.00
 ELEVATION DIFFERENCE(FEET) = 7.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.882
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 0.75
 TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.75

FLOW PROCESS FROM NODE 290.00 TO NODE 289.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	987.00	DOWNSTREAM ELEVATION(FEET) =	936.00
STREET LENGTH(FEET) =	680.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	39.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.39

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.32

HALFSTREET FLOOD WIDTH(FEET) = 9.67

AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.07

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.94

STREET FLOW TRAVEL TIME(MIN.) = 1.87 Tc(MIN.) = 3.75

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 1.36 SUBAREA RUNOFF(CFS) = 11.29

TOTAL AREA(ACRES) = 1.5 PEAK FLOW RATE(CFS) = 12.03

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 12.61

FLOW VELOCITY(FEET/SEC.) = 7.05 DEPTH*VELOCITY(FT*FT/SEC.) = 2.67

LONGEST FLOWPATH FROM NODE 291.00 TO NODE 289.00 = 780.00 FEET.

FLOW PROCESS FROM NODE 289.00 TO NODE 288.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	930.00	DOWNSTREAM(FEET) =	929.00
FLOW LENGTH(FEET) =	28.00	MANNING'S N =	0.013

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DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.30
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 12.03
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 3.79
LONGEST FLOWPATH FROM NODE 291.00 TO NODE 288.00 = 808.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 3.79
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.45
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.03

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.46	4.87	9.222	1.14
2	12.03	3.79	9.222	1.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	21.50	3.79	9.222
2	21.50	4.87	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.50 Tc(MIN.) = 4.87
TOTAL AREA(ACRES) = 2.6
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 288.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 285.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 929.00 DOWNSTREAM(FEET) = 890.00
FLOW LENGTH(FEET) = 595.00 MANNING'S N = 0.013

P-22

DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.18
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 21.50
PIPE TRAVEL TIME(MIN.) = 0.61 T_c(MIN.) = 5.48
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 285.00 = 1740.00 FEET.

FLOW PROCESS FROM NODE 285.00 TO NODE 285.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 5.48
RAINFALL INTENSITY(INCH/HR) = 8.69
TOTAL STREAM AREA(ACRES) = 2.59
PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.50

FLOW PROCESS FROM NODE 287.00 TO NODE 286.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 947.00
DOWNSTREAM ELEVATION(FEET) = 937.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.671
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.91
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.91

FLOW PROCESS FROM NODE 286.00 TO NODE 285.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 937.00 DOWNSTREAM ELEVATION(FEET) = 896.00
STREET LENGTH(FEET) = 585.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 39.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.14
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.00
AVERAGE FLOW VELOCITY(FT/SEC.) = 5.05
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.34
STREET FLOW TRAVEL TIME(MIN.) = 1.93 Tc(MIN.) = 3.60
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 1.26 SUBAREA RUNOFF(CFS) = 10.46
TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 11.37

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FT) = 0.31 HALFSTREET FLOOD WIDTH(FT) = 9.33
FLOW VELOCITY(FT/SEC.) = 5.75 DEPTH*VELOCITY(FT*FT/SEC.) = 1.80
LONGEST FLOWPATH FROM NODE 287.00 TO NODE 285.00 = 685.00 FEET.

FLOW PROCESS FROM NODE 285.00 TO NODE 285.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 3.60
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.37
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.37

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.50	5.48	8.688	2.59
2	11.37	3.60	9.222	1.37

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	31.62	3.60	9.222
2	32.21	5.48	8.688

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 32.21 T_c(MIN.) = 5.48

TOTAL AREA(ACRES) = 4.0

LONGEST FLOWPATH FROM NODE 298.00 TO NODE 285.00 = 1740.00 FEET.

FLOW PROCESS FROM NODE 285.00 TO NODE 281.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 890.00 DOWNSTREAM(FEET) = 851.00

FLOW LENGTH(FEET) = 595.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.7 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 17.92

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 32.21

PIPE TRAVEL TIME(MIN.) = 0.55 T_c(MIN.) = 6.04

LONGEST FLOWPATH FROM NODE 298.00 TO NODE 281.00 = 2335.00 FEET.

FLOW PROCESS FROM NODE 281.00 TO NODE 281.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 6.04

RAINFALL INTENSITY(INCH/HR) = 8.17

TOTAL STREAM AREA(ACRES) = 3.96

PEAK FLOW RATE(CFS) AT CONFLUENCE = 32.21

FLOW PROCESS FROM NODE 284.00 TO NODE 283.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 898.00
DOWNSTREAM ELEVATION(FEET) = 891.00
ELEVATION DIFFERENCE(FEET) = 7.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.724
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.33
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 1.33

FLOW PROCESS FROM NODE 283.00 TO NODE 282.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	891.00	DOWNSTREAM ELEVATION(FEET) =	857.00
STREET LENGTH(FEET) =	530.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	39.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.64
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 6.87
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.79
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.26
STREET FLOW TRAVEL TIME(MIN.) = 1.85 Tc(MIN.) = 3.57
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 1.04 SUBAREA RUNOFF(CFS) = 8.63
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 9.96

END OF SUBAREA STREET FLOW HYDRAULICS:

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DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 8.99
FLOW VELOCITY(FEET/SEC.) = 5.38 DEPTH*VELOCITY(FT*FT/SEC.) = 1.65
LONGEST FLOWPATH FROM NODE 284.00 TO NODE 282.00 = 620.00 FEET.

FLOW PROCESS FROM NODE 282.00 TO NODE 281.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 851.50 DOWNSTREAM(FEET) = 851.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.64
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 9.96
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 3.62
LONGEST FLOWPATH FROM NODE 284.00 TO NODE 281.00 = 645.00 FEET.

FLOW PROCESS FROM NODE 281.00 TO NODE 281.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 3.62
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.96

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	32.21	6.04	8.166	3.96
2	9.96	3.62	9.222	1.20

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.48	3.62	9.222
2	41.03	6.04	8.166

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

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PEAK FLOW RATE(CFS) = 41.03 Tc(MIN.) = 6.04
TOTAL AREA(ACRES) = 5.2
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 281.00 = 2335.00 FEET.

FLOW PROCESS FROM NODE 281.00 TO NODE 277.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 851.00 DOWNSTREAM(FEET) = 840.00
FLOW LENGTH(FEET) = 250.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.24
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 41.03
PIPE TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 6.29
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 277.00 = 2585.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.29
RAINFALL INTENSITY(INCH/HR) = 7.95
TOTAL STREAM AREA(ACRES) = 5.16
PEAK FLOW RATE(CFS) AT CONFLUENCE = 41.03

FLOW PROCESS FROM NODE 280.00 TO NODE 279.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 858.00
DOWNSTREAM ELEVATION(FEET) = 853.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.105
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.75
TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.75

FLOW PROCESS FROM NODE 279.00 TO NODE 278.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 853.00 DOWNSTREAM ELEVATION(FEET) = 846.60

STREET LENGTH(FEET) = 185.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.62

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.25

HALFSTREET FLOOD WIDTH(FEET) = 6.05

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.35

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.83

STREET FLOW TRAVEL TIME(MIN.) = 0.92 Tc(MIN.) = 3.03

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 0.21 SUBAREA RUNOFF(CFS) = 1.74

TOTAL AREA(ACRES) = 0.3 PEAK FLOW RATE(CFS) = 2.49

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.55

FLOW VELOCITY(FEET/SEC.) = 3.62 DEPTH*VELOCITY(FT*FT/SEC.) = 1.00

LONGEST FLOWPATH FROM NODE 280.00 TO NODE 278.00 = 285.00 FEET.

FLOW PROCESS FROM NODE 278.00 TO NODE 277.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 840.50 DOWNSTREAM(FEET) = 840.00

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FLOW LENGTH(FEET) = 38.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.17
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.49
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 3.15
LONGEST FLOWPATH FROM NODE 280.00 TO NODE 277.00 = 323.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 3.15
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.30
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.49

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	41.03	6.29	7.950	5.16
2	2.49	3.15	9.222	0.30

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.86	3.15	9.222
2	43.17	6.29	7.950

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 43.17 Tc(MIN.) = 6.29
TOTAL AREA(ACRES) = 5.5
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 277.00 = 2585.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 275.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

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                                P-22
ELEVATION DATA: UPSTREAM(FEET) = 840.00 DOWNSTREAM(FEET) = 837.00
FLOW LENGTH(FEET) = 237.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 24.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.17
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 43.17
PIPE TRAVEL TIME(MIN.) = 0.39 Tc(MIN.) = 6.68
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 275.00 = 2822.00 FEET.

*****
FLOW PROCESS FROM NODE 275.00 TO NODE 275.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.68
RAINFALL INTENSITY(INCH/HR) = 7.65
TOTAL STREAM AREA(ACRES) = 5.46
PEAK FLOW RATE(CFS) AT CONFLUENCE = 43.17

*****
FLOW PROCESS FROM NODE 280.00 TO NODE 276.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 858.00
DOWNSTREAM ELEVATION(FEET) = 853.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.105
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.75
TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.75

*****
FLOW PROCESS FROM NODE 276.00 TO NODE 275.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 853.00 DOWNSTREAM ELEVATION(FEET) = 840.10
STREET LENGTH(FEET) = 390.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 39.00

```

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.41
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.28
 HALFSTREET FLOOD WIDTH(FEET) = 7.48
 AVERAGE FLOW VELOCITY(FT/SEC.) = 3.55
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.98
 STREET FLOW TRAVEL TIME(MIN.) = 1.83 Tc(MIN.) = 3.94
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
 SUBAREA AREA(ACRES) = 0.40 SUBAREA RUNOFF(CFS) = 3.32
 TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 4.07

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.53
 FLOW VELOCITY(FT/SEC.) = 3.96 DEPTH*VELOCITY(FT*FT/SEC.) = 1.26
 LONGEST FLOWPATH FROM NODE 280.00 TO NODE 275.00 = 490.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 275.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.94
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 0.49
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.07

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	43.17	6.68	7.648	5.46

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2	4.07	3.94	9.222	0.49

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

**** PEAK FLOW RATE TABLE ****

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	39.87	3.94	9.222
2	46.55	6.68	7.648

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 46.55 Tc(MIN.) = 6.68
 TOTAL AREA(ACRES) = 5.9
 LONGEST FLOWPATH FROM NODE 298.00 TO NODE 275.00 = 2822.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 274.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 837.00 DOWNSTREAM(FEET) = 836.50
 FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.78
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 46.55
 PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 6.71
 LONGEST FLOWPATH FROM NODE 298.00 TO NODE 274.00 = 2842.00 FEET.

FLOW PROCESS FROM NODE 274.00 TO NODE 273.00 IS CODE = 52

 >>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 836.50 DOWNSTREAM(FEET) = 835.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 150.00 CHANNEL SLOPE = 0.0100
 CHANNEL FLOW THRU SUBAREA(CFS) = 46.55
 FLOW VELOCITY(FEET/SEC) = 3.79 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 7.37
 LONGEST FLOWPATH FROM NODE 298.00 TO NODE 273.00 = 2992.00 FEET.

FLOW PROCESS FROM NODE 274.00 TO NODE 273.00 IS CODE = 81

 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.183
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.8622
SUBAREA AREA(ACRES) = 0.40 SUBAREA RUNOFF(CFS) = 0.86
TOTAL AREA(ACRES) = 6.3 TOTAL RUNOFF(CFS) = 46.55
TC(MIN.) = 7.37
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

*****
FLOW PROCESS FROM NODE 273.00 TO NODE 272.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 835.00 DOWNSTREAM(FEET) = 834.00
FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 23.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.20
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 46.55
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 7.46
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 272.00 = 3057.00 FEET.

*****
FLOW PROCESS FROM NODE 272.00 TO NODE 272.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====
*****
FLOW PROCESS FROM NODE 2203.00 TO NODE 2202.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1445.00
DOWNSTREAM ELEVATION(FEET) = 1405.00
ELEVATION DIFFERENCE(FEET) = 40.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 0.22

```

TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.22

FLOW PROCESS FROM NODE 2202.00 TO NODE 2201.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1405.00	DOWNSTREAM(FEET) =	890.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	1382.00	CHANNEL SLOPE =	0.3726
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.2092 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION			
CHANNEL FLOW THRU SUBAREA(CFS) =	0.22		
FLOW VELOCITY(FEET/SEC) =	2.56 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	8.99	Tc(MIN.) =	15.26
LONGEST FLOWPATH FROM NODE	2203.00	TO NODE	2201.00 = 1482.00 FEET.

FLOW PROCESS FROM NODE 2202.00 TO NODE 2201.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	4.490		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.4500		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.4496		
SUBAREA AREA(ACRES) =	18.06	SUBAREA RUNOFF(CFS) =	36.49
TOTAL AREA(ACRES) =	18.1	TOTAL RUNOFF(CFS) =	36.62
TC(MIN.) =	15.26		

FLOW PROCESS FROM NODE 2201.00 TO NODE 2200.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	890.00	DOWNSTREAM(FEET) =	835.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	428.00	CHANNEL SLOPE =	0.1285
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.1207 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
CHANNEL FLOW THRU SUBAREA(CFS) =	36.62		
FLOW VELOCITY(FEET/SEC) =	6.45 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	1.11	Tc(MIN.) =	16.36
LONGEST FLOWPATH FROM NODE	2203.00	TO NODE	2200.00 = 1910.00 FEET.

FLOW PROCESS FROM NODE 2201.00 TO NODE 2200.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.292

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4300

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.4475

SUBAREA AREA(ACRES) = 2.14 SUBAREA RUNOFF(CFS) = 3.95

TOTAL AREA(ACRES) = 20.3 TOTAL RUNOFF(CFS) = 38.95

TC(MIN.) = 16.36

FLOW PROCESS FROM NODE 2200.00 TO NODE 2200.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 16.36

RAINFALL INTENSITY(INCH/HR) = 4.29

TOTAL STREAM AREA(ACRES) = 20.28

PEAK FLOW RATE(CFS) AT CONFLUENCE = 38.95

FLOW PROCESS FROM NODE 2207.00 TO NODE 2206.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1295.00

DOWNSTREAM ELEVATION(FEET) = 1270.00

ELEVATION DIFFERENCE(FEET) = 25.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

SUBAREA RUNOFF(CFS) = 0.42

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.42

FLOW PROCESS FROM NODE 2206.00 TO NODE 2205.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1270.00 DOWNSTREAM(FEET) = 1070.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 475.00 CHANNEL SLOPE = 0.4211
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2165 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.42
FLOW VELOCITY(FEET/SEC) = 2.61 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.04 Tc(MIN.) = 9.30
LONGEST FLOWPATH FROM NODE 2207.00 TO NODE 2205.00 = 575.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2206.00 TO NODE 2205.00 IS CODE = 81
-----
```

```
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.178
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4600
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4564
SUBAREA AREA(ACRES) = 4.44 SUBAREA RUNOFF(CFS) = 12.62
TOTAL AREA(ACRES) = 4.6 TOTAL RUNOFF(CFS) = 12.94
TC(MIN.) = 9.30
```

```
*****
FLOW PROCESS FROM NODE 2205.00 TO NODE 2200.00 IS CODE = 53
-----
```

```
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) = 1070.00 DOWNSTREAM(FEET) = 840.10
CHANNEL LENGTH THRU SUBAREA(FEET) = 930.00 CHANNEL SLOPE = 0.2472
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1791 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 12.94
FLOW VELOCITY(FEET/SEC) = 5.56 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.79 Tc(MIN.) = 12.09
LONGEST FLOWPATH FROM NODE 2207.00 TO NODE 2200.00 = 1505.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2205.00 TO NODE 2200.00 IS CODE = 81
-----
```

```
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.217
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
```

S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.4519
 SUBAREA AREA(ACRES) = 10.76 SUBAREA RUNOFF(CFS) = 25.26
 TOTAL AREA(ACRES) = 15.4 TOTAL RUNOFF(CFS) = 36.19
 TC(MIN.) = 12.09

FLOW PROCESS FROM NODE 2200.00 TO NODE 2200.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====
 TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.09
 RAINFALL INTENSITY(INCH/HR) = 5.22
 TOTAL STREAM AREA(ACRES) = 15.35
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 36.19

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	38.95	16.36	4.292	20.28
2	36.19	12.09	5.217	15.35

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	64.97	12.09	5.217
2	68.73	16.36	4.292

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 68.73 Tc(MIN.) = 16.36
 TOTAL AREA(ACRES) = 35.6
 LONGEST FLOWPATH FROM NODE 2203.00 TO NODE 2200.00 = 1910.00 FEET.

FLOW PROCESS FROM NODE 2200.00 TO NODE 272.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====
 ELEVATION DATA: UPSTREAM(FEET) = 840.10 DOWNSTREAM(FEET) = 834.00
 FLOW LENGTH(FEET) = 13.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.5 INCHES

P-22

PIPE-FLOW VELOCITY(FEET/SEC.) = 45.84
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 68.73
PIPE TRAVEL TIME(MIN.) = 0.00 Tc(MIN.) = 16.37
LONGEST FLOWPATH FROM NODE 2203.00 TO NODE 272.00 = 1923.00 FEET.

FLOW PROCESS FROM NODE 272.00 TO NODE 272.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	68.73	16.37	4.291	35.63

LONGEST FLOWPATH FROM NODE 2203.00 TO NODE 272.00 = 1923.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	46.55	7.46	7.122	6.35

LONGEST FLOWPATH FROM NODE 298.00 TO NODE 272.00 = 3057.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	77.88	7.46	7.122
2	96.77	16.37	4.291

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 96.77 Tc(MIN.) = 16.37
TOTAL AREA(ACRES) = 42.0

FLOW PROCESS FROM NODE 272.00 TO NODE 22.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 834.00 DOWNSTREAM(FEET) = 820.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 31.20
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 96.77
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 16.42
LONGEST FLOWPATH FROM NODE 298.00 TO NODE 22.00 = 3157.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 42.0 TC(MIN.) = 16.42

PEAK FLOW RATE(CFS) = 96.77

=====

=====

END OF RATIONAL METHOD ANALYSIS



Subbasin 22
Node 274

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 12/9/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 7 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 6.3 ACRES
RUNOFF COEFFICIENT 0.9
PEAK DISCHARGE 46.6 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 7	DISCHARGE (CFS) = 1.2
TIME (MIN) = 14	DISCHARGE (CFS) = 1.2
TIME (MIN) = 21	DISCHARGE (CFS) = 1.2
TIME (MIN) = 28	DISCHARGE (CFS) = 1.3
TIME (MIN) = 35	DISCHARGE (CFS) = 1.3
TIME (MIN) = 42	DISCHARGE (CFS) = 1.3
TIME (MIN) = 49	DISCHARGE (CFS) = 1.4
TIME (MIN) = 56	DISCHARGE (CFS) = 1.4
TIME (MIN) = 63	DISCHARGE (CFS) = 1.4
TIME (MIN) = 70	DISCHARGE (CFS) = 1.4
TIME (MIN) = 77	DISCHARGE (CFS) = 1.5
TIME (MIN) = 84	DISCHARGE (CFS) = 1.5
TIME (MIN) = 91	DISCHARGE (CFS) = 1.6
TIME (MIN) = 98	DISCHARGE (CFS) = 1.6
TIME (MIN) = 105	DISCHARGE (CFS) = 1.7
TIME (MIN) = 112	DISCHARGE (CFS) = 1.7
TIME (MIN) = 119	DISCHARGE (CFS) = 1.8
TIME (MIN) = 126	DISCHARGE (CFS) = 1.9
TIME (MIN) = 133	DISCHARGE (CFS) = 2
TIME (MIN) = 140	DISCHARGE (CFS) = 2
TIME (MIN) = 147	DISCHARGE (CFS) = 2.1
TIME (MIN) = 154	DISCHARGE (CFS) = 2.2
TIME (MIN) = 161	DISCHARGE (CFS) = 2.4
TIME (MIN) = 168	DISCHARGE (CFS) = 2.4
TIME (MIN) = 175	DISCHARGE (CFS) = 2.7
TIME (MIN) = 182	DISCHARGE (CFS) = 2.8
TIME (MIN) = 189	DISCHARGE (CFS) = 3.1
TIME (MIN) = 196	DISCHARGE (CFS) = 3.3
TIME (MIN) = 203	DISCHARGE (CFS) = 3.8
TIME (MIN) = 210	DISCHARGE (CFS) = 4.1
TIME (MIN) = 217	DISCHARGE (CFS) = 5

TIME (MIN) = 224 DISCHARGE (CFS) = 5.7
TIME (MIN) = 231 DISCHARGE (CFS) = 8.3
TIME (MIN) = 238 DISCHARGE (CFS) = 7.2
TIME (MIN) = 245 DISCHARGE (CFS) = 46.6
TIME (MIN) = 252 DISCHARGE (CFS) = 6.7
TIME (MIN) = 259 DISCHARGE (CFS) = 4.5
TIME (MIN) = 266 DISCHARGE (CFS) = 3.5
TIME (MIN) = 273 DISCHARGE (CFS) = 2.9
TIME (MIN) = 280 DISCHARGE (CFS) = 2.6
TIME (MIN) = 287 DISCHARGE (CFS) = 2.3
TIME (MIN) = 294 DISCHARGE (CFS) = 2.1
TIME (MIN) = 301 DISCHARGE (CFS) = 1.9
TIME (MIN) = 308 DISCHARGE (CFS) = 1.8
TIME (MIN) = 315 DISCHARGE (CFS) = 1.6
TIME (MIN) = 322 DISCHARGE (CFS) = 1.6
TIME (MIN) = 329 DISCHARGE (CFS) = 1.5
TIME (MIN) = 336 DISCHARGE (CFS) = 1.4
TIME (MIN) = 343 DISCHARGE (CFS) = 1.3
TIME (MIN) = 350 DISCHARGE (CFS) = 1.3
TIME (MIN) = 357 DISCHARGE (CFS) = 1.2
TIME (MIN) = 364 DISCHARGE (CFS) = 0

Detention Basin 22 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 46.6 cfs

Time of Concentration= 7 minutes

HEC-HMS Time Interval Used= 1 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0		0.0
1		0.2	0.2
2		0.3	0.3
3		0.5	0.5
4		0.7	0.7
5		0.9	0.9
6		1.0	1.0
7	1.2		1.2
8		1.2	1.2
9		1.2	1.2
10		1.2	1.2
11		1.2	1.2
12		1.2	1.2
13		1.2	1.2
14	1.2		1.2
15		1.2	1.2
16		1.2	1.2
17		1.2	1.2
18		1.2	1.2
19		1.2	1.2
20		1.2	1.2
21	1.2		1.2
22		1.2	1.2
23		1.2	1.2
24		1.2	1.2
25		1.3	1.3
26		1.3	1.3
27		1.3	1.3
28	1.3		1.3
29		1.3	1.3
30		1.3	1.3
31		1.3	1.3
32		1.3	1.3
33		1.3	1.3
34		1.3	1.3
35	1.3		1.3
36		1.3	1.3
37		1.3	1.3
38		1.3	1.3

39		1.3	1.3
40		1.3	1.3
41		1.3	1.3
42	1.3		1.3
43		1.3	1.3
44		1.3	1.3
45		1.3	1.3
46		1.4	1.4
47		1.4	1.4
48		1.4	1.4
49	1.4		1.4
50		1.4	1.4
51		1.4	1.4
52		1.4	1.4
53		1.4	1.4
54		1.4	1.4
55		1.4	1.4
56	1.4		1.4
57		1.4	1.4
58		1.4	1.4
59		1.4	1.4
60		1.4	1.4
61		1.4	1.4
62		1.4	1.4
63	1.4		1.4
64		1.4	1.4
65		1.4	1.4
66		1.4	1.4
67		1.4	1.4
68		1.4	1.4
69		1.4	1.4
70	1.4		1.4
71		1.4	1.4
72		1.4	1.4
73		1.4	1.4
74		1.5	1.5
75		1.5	1.5
76		1.5	1.5
77	1.5		1.5
78		1.5	1.5
79		1.5	1.5
80		1.5	1.5
81		1.5	1.5
82		1.5	1.5
83		1.5	1.5
84	1.5		1.5
85		1.5	1.5
86		1.5	1.5

87		1.5	1.5
88		1.6	1.6
89		1.6	1.6
90		1.6	1.6
91	1.6		1.6
92		1.6	1.6
93		1.6	1.6
94		1.6	1.6
95		1.6	1.6
96		1.6	1.6
97		1.6	1.6
98	1.6		1.6
99		1.6	1.6
100		1.6	1.6
101		1.6	1.6
102		1.7	1.7
103		1.7	1.7
104		1.7	1.7
105	1.7		1.7
106		1.7	1.7
107		1.7	1.7
108		1.7	1.7
109		1.7	1.7
110		1.7	1.7
111		1.7	1.7
112	1.7		1.7
113		1.7	1.7
114		1.7	1.7
115		1.7	1.7
116		1.8	1.8
117		1.8	1.8
118		1.8	1.8
119	1.8		1.8
120		1.8	1.8
121		1.8	1.8
122		1.8	1.8
123		1.9	1.9
124		1.9	1.9
125		1.9	1.9
126	1.9		1.9
127		1.9	1.9
128		1.9	1.9
129		1.9	1.9
130		2.0	2.0
131		2.0	2.0
132		2.0	2.0
133	2		2.0
134		2.0	2.0

135		2.0	2.0
136		2.0	2.0
137		2.0	2.0
138		2.0	2.0
139		2.0	2.0
140	2		2.0
141		2.0	2.0
142		2.0	2.0
143		2.0	2.0
144		2.1	2.1
145		2.1	2.1
146		2.1	2.1
147	2.1		2.1
148		2.1	2.1
149		2.1	2.1
150		2.1	2.1
151		2.2	2.2
152		2.2	2.2
153		2.2	2.2
154	2.2		2.2
155		2.2	2.2
156		2.3	2.3
157		2.3	2.3
158		2.3	2.3
159		2.3	2.3
160		2.4	2.4
161	2.4		2.4
162		2.4	2.4
163		2.4	2.4
164		2.4	2.4
165		2.4	2.4
166		2.4	2.4
167		2.4	2.4
168	2.4		2.4
169		2.4	2.4
170		2.5	2.5
171		2.5	2.5
172		2.6	2.6
173		2.6	2.6
174		2.7	2.7
175	2.7		2.7
176		2.7	2.7
177		2.7	2.7
178		2.7	2.7
179		2.8	2.8
180		2.8	2.8
181		2.8	2.8
182	2.8		2.8

183		2.8	2.8
184		2.9	2.9
185		2.9	2.9
186		3.0	3.0
187		3.0	3.0
188		3.1	3.1
189	3.1		3.1
190		3.1	3.1
191		3.2	3.2
192		3.2	3.2
193		3.2	3.2
194		3.2	3.2
195		3.3	3.3
196	3.3		3.3
197		3.4	3.4
198		3.4	3.4
199		3.5	3.5
200		3.6	3.6
201		3.7	3.7
202		3.7	3.7
203	3.8		3.8
204		3.8	3.8
205		3.9	3.9
206		3.9	3.9
207		4.0	4.0
208		4.0	4.0
209		4.1	4.1
210	4.1		4.1
211		4.2	4.2
212		4.4	4.4
213		4.5	4.5
214		4.6	4.6
215		4.7	4.7
216		4.9	4.9
217	5		5.0
218		5.1	5.1
219		5.2	5.2
220		5.3	5.3
221		5.4	5.4
222		5.5	5.5
223		5.6	5.6
224	5.7		5.7
225		6.1	6.1
226		6.4	6.4
227		6.8	6.8
228		7.2	7.2
229		7.6	7.6
230		7.9	7.9

231	8.3		8.3
232		8.1	8.1
233		8.0	8.0
234		7.8	7.8
235		7.7	7.7
236		7.5	7.5
237		7.4	7.4
238	7.2		7.2
239		12.8	12.8
240		18.5	18.5
241		24.1	24.1
242		29.7	29.7
243		35.3	35.3
244		41.0	41.0
245	46.6		46.6
246		40.9	40.9
247		35.2	35.2
248		29.5	29.5
249		23.8	23.8
250		18.1	18.1
251		12.4	12.4
252	6.7		6.7
253		6.4	6.4
254		6.1	6.1
255		5.8	5.8
256		5.4	5.4
257		5.1	5.1
258		4.8	4.8
259	4.5		4.5
260		4.4	4.4
261		4.2	4.2
262		4.1	4.1
263		3.9	3.9
264		3.8	3.8
265		3.6	3.6
266	3.5		3.5
267		3.4	3.4
268		3.3	3.3
269		3.2	3.2
270		3.2	3.2
271		3.1	3.1
272		3.0	3.0
273	2.9		2.9
274		2.9	2.9
275		2.8	2.8
276		2.8	2.8
277		2.7	2.7
278		2.7	2.7

279		2.6	2.6
280	2.6		2.6
281		2.6	2.6
282		2.5	2.5
283		2.5	2.5
284		2.4	2.4
285		2.4	2.4
286		2.3	2.3
287	2.3		2.3
288		2.3	2.3
289		2.2	2.2
290		2.2	2.2
291		2.2	2.2
292		2.2	2.2
293		2.1	2.1
294	2.1		2.1
295		2.1	2.1
296		2.0	2.0
297		2.0	2.0
298		2.0	2.0
299		2.0	2.0
300		1.9	1.9
301	1.9		1.9
302		1.9	1.9
303		1.9	1.9
304		1.9	1.9
305		1.8	1.8
306		1.8	1.8
307		1.8	1.8
308	1.8		1.8
309		1.8	1.8
310		1.7	1.7
311		1.7	1.7
312		1.7	1.7
313		1.7	1.7
314		1.6	1.6
315	1.6		1.6
316		1.6	1.6
317		1.6	1.6
318		1.6	1.6
319		1.6	1.6
320		1.6	1.6
321		1.6	1.6
322	1.6		1.6
323		1.6	1.6
324		1.6	1.6
325		1.6	1.6
326		1.5	1.5

327		1.5	1.5
328		1.5	1.5
329	1.5		1.5
330		1.5	1.5
331		1.5	1.5
332		1.5	1.5
333		1.4	1.4
334		1.4	1.4
335		1.4	1.4
336	1.4		1.4
337		1.4	1.4
338		1.4	1.4
339		1.4	1.4
340		1.3	1.3
341		1.3	1.3
342		1.3	1.3
343	1.3		1.3
344		1.3	1.3
345		1.3	1.3
346		1.3	1.3
347		1.3	1.3
348		1.3	1.3
349		1.3	1.3
350	1.3		1.3
351		1.3	1.3
352		1.3	1.3
353		1.3	1.3
354		1.2	1.2
355		1.2	1.2
356		1.2	1.2
357	1.2		1.2
358		1.0	1.0
359		0.9	0.9
360		0.7	0.7
361		0.5	0.5
362		0.3	0.3
363		0.2	0.2
364	0		0.0

Detention 22 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree view of the project structure:

- Detention 22
 - Basin Models
 - Basin 22
 - Basin Inflow** (selected)
 - Detention Basin 22
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Sierra
 - Control Specifications
 - Control 1
 - Time-Series Data
 - Discharge Gages
 - Node 274 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:04
 - Paired Data
 - Elevation-Storage Functions
 - Basin 22 Stage-Storage

Below the tree view are three tabs: Components, Compute, and Results. The Components tab is active.

The bottom section shows the configuration for the selected 'Basin Inflow' element. It has three sub-tabs: Source, Inflow, and Options. The Inflow tab is active.

Basin Name: Basin 22
Element Name: Basin Inflow

Description:	Node 274	
Downstream:	Detention Basin 22	
Area (MI2)	0.0098	
Flow Method:	Discharge Gage	

Detention 22

Basin Models

Basin 22

Basin Inflow

Detention Basin 22

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 274 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:04

Paired Data

Elevation-Storage Functions

Basin 22 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 22

Element Name: Detention Basin 22

Method: Orifice Outlet

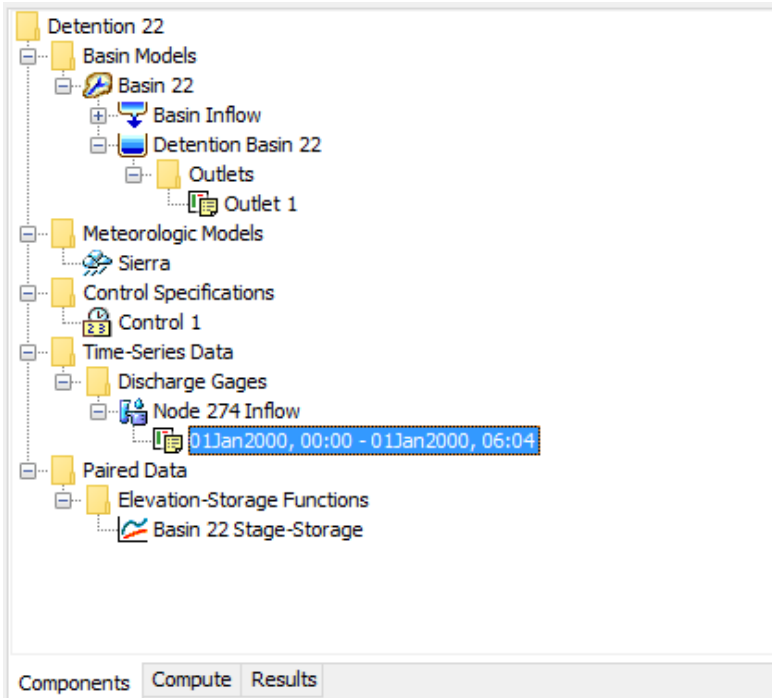
Direction: Main

Number Barrels: 2

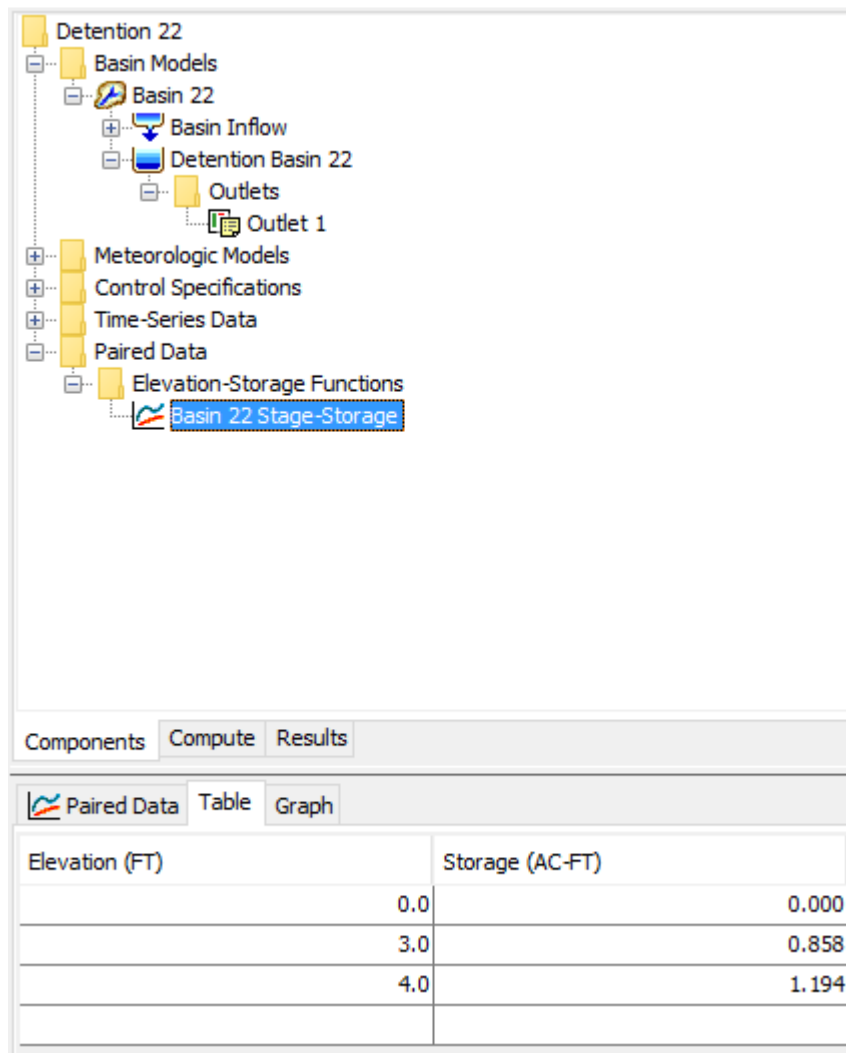
*Center Elevation (FT) 0.75

*Area (FT2) 1.77

*Coefficient: 0.6



Time-Series Gage		Time Window	Table	Graph
Time (ddMMYYYY, HH:mm)		Discharge (CFS)		
01Jan2000, 00:00		0.0		^
01Jan2000, 00:01		0.2		
01Jan2000, 00:02		0.3		
01Jan2000, 00:03		0.5		
01Jan2000, 00:04		0.7		
01Jan2000, 00:05		0.9		
01Jan2000, 00:06		1.0		
01Jan2000, 00:07		1.2		
01Jan2000, 00:08		1.2		
01Jan2000, 00:09		1.2		
01Jan2000, 00:10		1.2		
01Jan2000, 00:11		1.2		
01Jan2000, 00:12		1.2		
01Jan2000, 00:13		1.2		
01Jan2000, 00:14		1.2		
01Jan2000, 00:15		1.2		
01Jan2000, 00:16		1.2		
01Jan2000, 00:17		1.2		
01Jan2000, 00:18		1.2		
01Jan2000, 00:19		1.2		
01Jan2000, 00:20		1.2		
01Jan2000, 00:21		1.2		
01Jan2000, 00:22		1.2		
01Jan2000, 00:23		1.2		
01Jan2000, 00:24		1.2		▼



Project: Detention 22 Simulation Run: Run 1
Reservoir: Detention Basin 22

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 22
End of Run:	01Jan2000, 06:04	Meteorologic Model:	Sierra
Compute Time:	16Jan2017, 17:11:17	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	46.6 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	18.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:10
Inflow Volume:	1.6 (AC-FT)	Peak Storage:	0.5 (AC-FT)
Discharge Volume:	1.4 (AC-FT)	Peak Elevation:	1.9 (FT)

Project: Detention 22 Simulation Run: Run 1
Reservoir: Detention Basin 22

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 22
End of Run: 01Jan2000, 06:04 Meteorologic Model: Sierra
Compute Time: 16Jan2017, 17:11:17 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0
01Jan2000	00:02	0.3	0.0	0.0	0.0
01Jan2000	00:03	0.5	0.0	0.0	0.0
01Jan2000	00:04	0.7	0.0	0.0	0.0
01Jan2000	00:05	0.9	0.0	0.0	0.0
01Jan2000	00:06	1.0	0.0	0.0	0.0
01Jan2000	00:07	1.2	0.0	0.0	0.0
01Jan2000	00:08	1.2	0.0	0.0	0.0
01Jan2000	00:09	1.2	0.0	0.0	0.0
01Jan2000	00:10	1.2	0.0	0.0	0.0
01Jan2000	00:11	1.2	0.0	0.0	0.0
01Jan2000	00:12	1.2	0.0	0.0	0.0
01Jan2000	00:13	1.2	0.0	0.1	0.0
01Jan2000	00:14	1.2	0.0	0.1	0.0
01Jan2000	00:15	1.2	0.0	0.1	0.0
01Jan2000	00:16	1.2	0.0	0.1	0.0
01Jan2000	00:17	1.2	0.0	0.1	0.0
01Jan2000	00:18	1.2	0.0	0.1	0.0
01Jan2000	00:19	1.2	0.0	0.1	0.0
01Jan2000	00:20	1.2	0.0	0.1	0.0
01Jan2000	00:21	1.2	0.0	0.1	0.0
01Jan2000	00:22	1.2	0.0	0.1	0.0
01Jan2000	00:23	1.2	0.0	0.1	0.0
01Jan2000	00:24	1.2	0.0	0.1	0.0
01Jan2000	00:25	1.3	0.0	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	1.3	0.0	0.1	0.0
01Jan2000	00:27	1.3	0.0	0.1	0.0
01Jan2000	00:28	1.3	0.0	0.1	0.0
01Jan2000	00:29	1.3	0.0	0.2	0.0
01Jan2000	00:30	1.3	0.0	0.2	0.0
01Jan2000	00:31	1.3	0.0	0.2	0.0
01Jan2000	00:32	1.3	0.0	0.2	0.0
01Jan2000	00:33	1.3	0.0	0.2	0.0
01Jan2000	00:34	1.3	0.1	0.2	0.0
01Jan2000	00:35	1.3	0.1	0.2	0.0
01Jan2000	00:36	1.3	0.1	0.2	0.0
01Jan2000	00:37	1.3	0.1	0.2	0.0
01Jan2000	00:38	1.3	0.1	0.2	0.0
01Jan2000	00:39	1.3	0.1	0.2	0.0
01Jan2000	00:40	1.3	0.1	0.2	0.0
01Jan2000	00:41	1.3	0.1	0.2	0.0
01Jan2000	00:42	1.3	0.1	0.2	0.0
01Jan2000	00:43	1.3	0.1	0.2	0.0
01Jan2000	00:44	1.3	0.1	0.2	0.0
01Jan2000	00:45	1.3	0.1	0.3	0.0
01Jan2000	00:46	1.4	0.1	0.3	0.0
01Jan2000	00:47	1.4	0.1	0.3	0.0
01Jan2000	00:48	1.4	0.1	0.3	0.0
01Jan2000	00:49	1.4	0.1	0.3	0.0
01Jan2000	00:50	1.4	0.1	0.3	0.0
01Jan2000	00:51	1.4	0.1	0.3	0.0
01Jan2000	00:52	1.4	0.1	0.3	0.0
01Jan2000	00:53	1.4	0.1	0.3	0.0
01Jan2000	00:54	1.4	0.1	0.3	0.0
01Jan2000	00:55	1.4	0.1	0.3	0.0
01Jan2000	00:56	1.4	0.1	0.3	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	1.4	0.1	0.3	0.0
01Jan2000	00:58	1.4	0.1	0.3	0.0
01Jan2000	00:59	1.4	0.1	0.3	0.0
01Jan2000	01:00	1.4	0.1	0.4	0.0
01Jan2000	01:01	1.4	0.1	0.4	0.0
01Jan2000	01:02	1.4	0.1	0.4	0.0
01Jan2000	01:03	1.4	0.1	0.4	0.0
01Jan2000	01:04	1.4	0.1	0.4	0.0
01Jan2000	01:05	1.4	0.1	0.4	0.0
01Jan2000	01:06	1.4	0.1	0.4	0.0
01Jan2000	01:07	1.4	0.1	0.4	0.0
01Jan2000	01:08	1.4	0.1	0.4	0.0
01Jan2000	01:09	1.4	0.1	0.4	0.0
01Jan2000	01:10	1.4	0.1	0.4	0.0
01Jan2000	01:11	1.4	0.1	0.4	0.0
01Jan2000	01:12	1.4	0.1	0.4	0.0
01Jan2000	01:13	1.4	0.1	0.4	0.0
01Jan2000	01:14	1.5	0.1	0.4	0.0
01Jan2000	01:15	1.5	0.1	0.5	0.0
01Jan2000	01:16	1.5	0.1	0.5	0.0
01Jan2000	01:17	1.5	0.1	0.5	0.0
01Jan2000	01:18	1.5	0.1	0.5	0.0
01Jan2000	01:19	1.5	0.1	0.5	0.0
01Jan2000	01:20	1.5	0.1	0.5	0.0
01Jan2000	01:21	1.5	0.1	0.5	0.0
01Jan2000	01:22	1.5	0.1	0.5	0.0
01Jan2000	01:23	1.5	0.1	0.5	0.0
01Jan2000	01:24	1.5	0.1	0.5	0.0
01Jan2000	01:25	1.5	0.2	0.5	0.0
01Jan2000	01:26	1.5	0.2	0.5	0.0
01Jan2000	01:27	1.5	0.2	0.5	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	1.6	0.2	0.5	0.0
01Jan2000	01:29	1.6	0.2	0.6	0.0
01Jan2000	01:30	1.6	0.2	0.6	0.0
01Jan2000	01:31	1.6	0.2	0.6	0.0
01Jan2000	01:32	1.6	0.2	0.6	0.0
01Jan2000	01:33	1.6	0.2	0.6	0.0
01Jan2000	01:34	1.6	0.2	0.6	0.0
01Jan2000	01:35	1.6	0.2	0.6	0.0
01Jan2000	01:36	1.6	0.2	0.6	0.0
01Jan2000	01:37	1.6	0.2	0.6	0.0
01Jan2000	01:38	1.6	0.2	0.6	0.0
01Jan2000	01:39	1.6	0.2	0.6	0.0
01Jan2000	01:40	1.6	0.2	0.6	0.0
01Jan2000	01:41	1.6	0.2	0.6	0.0
01Jan2000	01:42	1.7	0.2	0.7	0.0
01Jan2000	01:43	1.7	0.2	0.7	0.0
01Jan2000	01:44	1.7	0.2	0.7	0.0
01Jan2000	01:45	1.7	0.2	0.7	0.0
01Jan2000	01:46	1.7	0.2	0.7	0.0
01Jan2000	01:47	1.7	0.2	0.7	0.0
01Jan2000	01:48	1.7	0.2	0.7	0.0
01Jan2000	01:49	1.7	0.2	0.7	0.0
01Jan2000	01:50	1.7	0.2	0.7	0.0
01Jan2000	01:51	1.7	0.2	0.7	0.0
01Jan2000	01:52	1.7	0.2	0.7	0.0
01Jan2000	01:53	1.7	0.2	0.7	0.0
01Jan2000	01:54	1.7	0.2	0.8	1.0
01Jan2000	01:55	1.7	0.2	0.8	1.3
01Jan2000	01:56	1.8	0.2	0.8	1.5
01Jan2000	01:57	1.8	0.2	0.8	1.6
01Jan2000	01:58	1.8	0.2	0.8	1.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	1.8	0.2	0.8	1.7
01Jan2000	02:00	1.8	0.2	0.8	1.7
01Jan2000	02:01	1.8	0.2	0.8	1.8
01Jan2000	02:02	1.8	0.2	0.8	1.8
01Jan2000	02:03	1.9	0.2	0.8	1.8
01Jan2000	02:04	1.9	0.2	0.8	1.8
01Jan2000	02:05	1.9	0.2	0.8	1.9
01Jan2000	02:06	1.9	0.2	0.8	1.9
01Jan2000	02:07	1.9	0.2	0.8	1.9
01Jan2000	02:08	1.9	0.2	0.8	1.9
01Jan2000	02:09	1.9	0.2	0.8	1.9
01Jan2000	02:10	2.0	0.2	0.8	1.9
01Jan2000	02:11	2.0	0.2	0.8	1.9
01Jan2000	02:12	2.0	0.2	0.8	2.0
01Jan2000	02:13	2.0	0.2	0.8	2.0
01Jan2000	02:14	2.0	0.2	0.8	2.0
01Jan2000	02:15	2.0	0.2	0.8	2.0
01Jan2000	02:16	2.0	0.2	0.8	2.0
01Jan2000	02:17	2.0	0.2	0.8	2.0
01Jan2000	02:18	2.0	0.2	0.8	2.0
01Jan2000	02:19	2.0	0.2	0.8	2.0
01Jan2000	02:20	2.0	0.2	0.8	2.0
01Jan2000	02:21	2.0	0.2	0.8	2.0
01Jan2000	02:22	2.0	0.2	0.8	2.0
01Jan2000	02:23	2.0	0.2	0.8	2.0
01Jan2000	02:24	2.1	0.2	0.8	2.0
01Jan2000	02:25	2.1	0.2	0.8	2.0
01Jan2000	02:26	2.1	0.2	0.8	2.1
01Jan2000	02:27	2.1	0.2	0.8	2.1
01Jan2000	02:28	2.1	0.2	0.8	2.1
01Jan2000	02:29	2.1	0.2	0.8	2.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	2.1	0.2	0.8	2.1
01Jan2000	02:31	2.2	0.2	0.8	2.1
01Jan2000	02:32	2.2	0.2	0.8	2.1
01Jan2000	02:33	2.2	0.2	0.8	2.2
01Jan2000	02:34	2.2	0.2	0.8	2.2
01Jan2000	02:35	2.2	0.2	0.8	2.2
01Jan2000	02:36	2.3	0.2	0.8	2.2
01Jan2000	02:37	2.3	0.2	0.8	2.2
01Jan2000	02:38	2.3	0.2	0.8	2.2
01Jan2000	02:39	2.3	0.2	0.8	2.3
01Jan2000	02:40	2.4	0.2	0.8	2.3
01Jan2000	02:41	2.4	0.2	0.8	2.3
01Jan2000	02:42	2.4	0.2	0.8	2.3
01Jan2000	02:43	2.4	0.2	0.8	2.4
01Jan2000	02:44	2.4	0.2	0.8	2.4
01Jan2000	02:45	2.4	0.2	0.8	2.4
01Jan2000	02:46	2.4	0.2	0.8	2.4
01Jan2000	02:47	2.4	0.2	0.8	2.4
01Jan2000	02:48	2.4	0.2	0.8	2.4
01Jan2000	02:49	2.4	0.2	0.8	2.4
01Jan2000	02:50	2.5	0.2	0.8	2.4
01Jan2000	02:51	2.5	0.2	0.8	2.4
01Jan2000	02:52	2.6	0.2	0.8	2.5
01Jan2000	02:53	2.6	0.2	0.8	2.5
01Jan2000	02:54	2.7	0.2	0.8	2.5
01Jan2000	02:55	2.7	0.2	0.8	2.6
01Jan2000	02:56	2.7	0.2	0.8	2.6
01Jan2000	02:57	2.7	0.2	0.8	2.6
01Jan2000	02:58	2.7	0.2	0.8	2.6
01Jan2000	02:59	2.8	0.2	0.8	2.7
01Jan2000	03:00	2.8	0.2	0.8	2.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	2.8	0.2	0.8	2.7
01Jan2000	03:02	2.8	0.2	0.8	2.7
01Jan2000	03:03	2.8	0.2	0.8	2.8
01Jan2000	03:04	2.9	0.2	0.8	2.8
01Jan2000	03:05	2.9	0.2	0.8	2.8
01Jan2000	03:06	3.0	0.2	0.8	2.8
01Jan2000	03:07	3.0	0.2	0.8	2.9
01Jan2000	03:08	3.1	0.2	0.8	2.9
01Jan2000	03:09	3.1	0.2	0.8	3.0
01Jan2000	03:10	3.1	0.2	0.8	3.0
01Jan2000	03:11	3.2	0.2	0.8	3.0
01Jan2000	03:12	3.2	0.2	0.8	3.1
01Jan2000	03:13	3.2	0.2	0.8	3.1
01Jan2000	03:14	3.2	0.2	0.8	3.1
01Jan2000	03:15	3.3	0.2	0.8	3.1
01Jan2000	03:16	3.3	0.2	0.8	3.2
01Jan2000	03:17	3.4	0.2	0.8	3.2
01Jan2000	03:18	3.4	0.2	0.8	3.2
01Jan2000	03:19	3.5	0.2	0.8	3.3
01Jan2000	03:20	3.6	0.2	0.8	3.3
01Jan2000	03:21	3.7	0.2	0.8	3.4
01Jan2000	03:22	3.7	0.2	0.8	3.5
01Jan2000	03:23	3.8	0.2	0.8	3.5
01Jan2000	03:24	3.8	0.2	0.8	3.6
01Jan2000	03:25	3.9	0.2	0.8	3.6
01Jan2000	03:26	3.9	0.2	0.8	3.7
01Jan2000	03:27	4.0	0.2	0.8	3.7
01Jan2000	03:28	4.0	0.2	0.8	3.8
01Jan2000	03:29	4.1	0.2	0.8	3.8
01Jan2000	03:30	4.1	0.2	0.8	3.9
01Jan2000	03:31	4.2	0.2	0.8	3.9

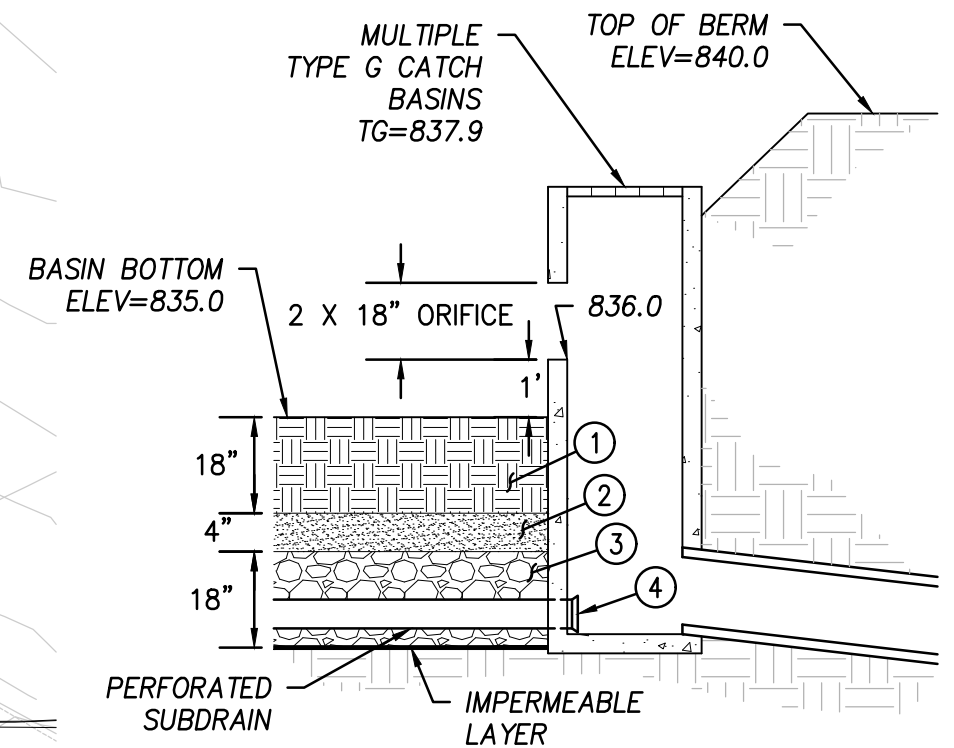
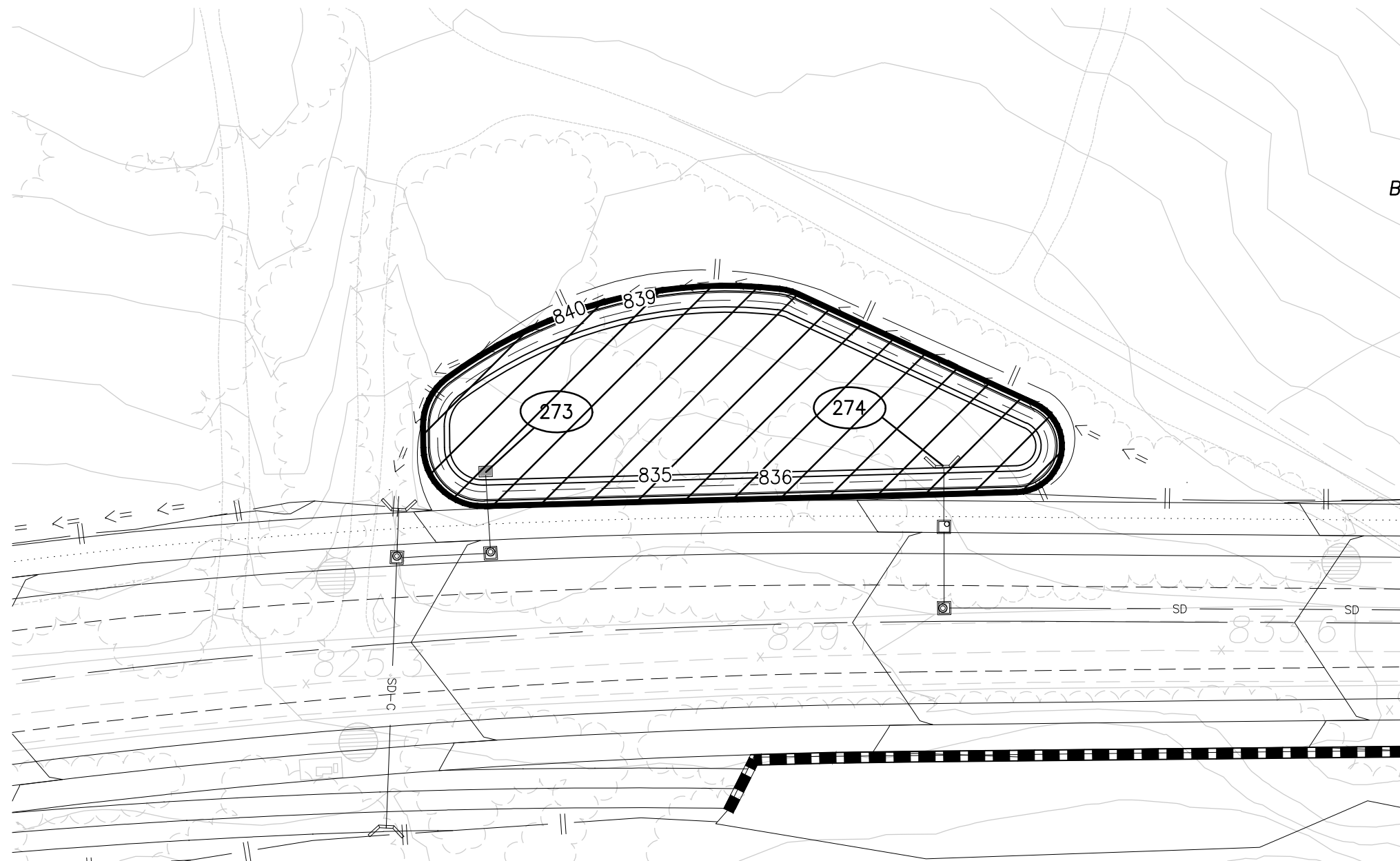
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	4.4	0.2	0.8	4.0
01Jan2000	03:33	4.5	0.2	0.8	4.0
01Jan2000	03:34	4.6	0.2	0.8	4.1
01Jan2000	03:35	4.7	0.2	0.8	4.2
01Jan2000	03:36	4.9	0.2	0.8	4.3
01Jan2000	03:37	5.0	0.2	0.8	4.4
01Jan2000	03:38	5.1	0.2	0.8	4.5
01Jan2000	03:39	5.2	0.2	0.8	4.6
01Jan2000	03:40	5.3	0.2	0.8	4.7
01Jan2000	03:41	5.4	0.2	0.8	4.8
01Jan2000	03:42	5.5	0.2	0.8	4.9
01Jan2000	03:43	5.6	0.2	0.8	5.0
01Jan2000	03:44	5.7	0.2	0.8	5.0
01Jan2000	03:45	6.1	0.2	0.8	5.2
01Jan2000	03:46	6.4	0.2	0.8	5.3
01Jan2000	03:47	6.8	0.2	0.9	5.5
01Jan2000	03:48	7.2	0.2	0.9	5.6
01Jan2000	03:49	7.6	0.2	0.9	5.8
01Jan2000	03:50	7.9	0.2	0.9	6.1
01Jan2000	03:51	8.3	0.3	0.9	6.3
01Jan2000	03:52	8.1	0.3	0.9	6.5
01Jan2000	03:53	8.0	0.3	0.9	6.6
01Jan2000	03:54	7.8	0.3	0.9	6.8
01Jan2000	03:55	7.7	0.3	0.9	6.9
01Jan2000	03:56	7.5	0.3	0.9	6.9
01Jan2000	03:57	7.4	0.3	0.9	7.0
01Jan2000	03:58	7.2	0.3	0.9	7.0
01Jan2000	03:59	12.8	0.3	0.9	7.3
01Jan2000	04:00	18.5	0.3	1.0	8.0
01Jan2000	04:01	24.1	0.3	1.0	9.1
01Jan2000	04:02	29.7	0.3	1.1	10.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	35.3	0.3	1.2	11.7
01Jan2000	04:04	41.0	0.4	1.3	13.1
01Jan2000	04:05	46.6	0.4	1.5	14.6
01Jan2000	04:06	40.9	0.5	1.6	16.0
01Jan2000	04:07	35.2	0.5	1.7	16.9
01Jan2000	04:08	29.5	0.5	1.8	17.5
01Jan2000	04:09	23.8	0.5	1.8	17.9
01Jan2000	04:10	18.1	0.5	1.9	18.0
01Jan2000	04:11	12.4	0.5	1.8	17.9
01Jan2000	04:12	6.7	0.5	1.8	17.5
01Jan2000	04:13	6.4	0.5	1.8	17.1
01Jan2000	04:14	6.1	0.5	1.7	16.7
01Jan2000	04:15	5.8	0.5	1.7	16.2
01Jan2000	04:16	5.4	0.5	1.6	15.8
01Jan2000	04:17	5.1	0.4	1.6	15.3
01Jan2000	04:18	4.8	0.4	1.5	14.8
01Jan2000	04:19	4.5	0.4	1.5	14.3
01Jan2000	04:20	4.4	0.4	1.4	13.9
01Jan2000	04:21	4.2	0.4	1.4	13.4
01Jan2000	04:22	4.1	0.4	1.3	12.9
01Jan2000	04:23	3.9	0.4	1.3	12.4
01Jan2000	04:24	3.8	0.4	1.2	11.9
01Jan2000	04:25	3.6	0.3	1.2	11.5
01Jan2000	04:26	3.5	0.3	1.2	11.0
01Jan2000	04:27	3.4	0.3	1.1	10.5
01Jan2000	04:28	3.3	0.3	1.1	10.0
01Jan2000	04:29	3.2	0.3	1.1	9.6
01Jan2000	04:30	3.2	0.3	1.0	9.1
01Jan2000	04:31	3.1	0.3	1.0	8.7
01Jan2000	04:32	3.0	0.3	1.0	8.2
01Jan2000	04:33	2.9	0.3	1.0	7.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	2.9	0.3	0.9	7.3
01Jan2000	04:35	2.8	0.3	0.9	6.9
01Jan2000	04:36	2.8	0.3	0.9	6.5
01Jan2000	04:37	2.7	0.3	0.9	6.1
01Jan2000	04:38	2.7	0.2	0.9	5.7
01Jan2000	04:39	2.6	0.2	0.8	5.4
01Jan2000	04:40	2.6	0.2	0.8	5.0
01Jan2000	04:41	2.6	0.2	0.8	4.7
01Jan2000	04:42	2.5	0.2	0.8	4.4
01Jan2000	04:43	2.5	0.2	0.8	4.1
01Jan2000	04:44	2.4	0.2	0.8	3.8
01Jan2000	04:45	2.4	0.2	0.8	3.6
01Jan2000	04:46	2.3	0.2	0.8	3.4
01Jan2000	04:47	2.3	0.2	0.8	3.1
01Jan2000	04:48	2.3	0.2	0.8	3.0
01Jan2000	04:49	2.2	0.2	0.8	2.8
01Jan2000	04:50	2.2	0.2	0.8	2.7
01Jan2000	04:51	2.2	0.2	0.8	2.6
01Jan2000	04:52	2.2	0.2	0.8	2.5
01Jan2000	04:53	2.1	0.2	0.8	2.4
01Jan2000	04:54	2.1	0.2	0.8	2.3
01Jan2000	04:55	2.1	0.2	0.8	2.3
01Jan2000	04:56	2.0	0.2	0.8	2.2
01Jan2000	04:57	2.0	0.2	0.8	2.1
01Jan2000	04:58	2.0	0.2	0.8	2.1
01Jan2000	04:59	2.0	0.2	0.8	2.1
01Jan2000	05:00	1.9	0.2	0.8	2.0
01Jan2000	05:01	1.9	0.2	0.8	2.0
01Jan2000	05:02	1.9	0.2	0.8	2.0
01Jan2000	05:03	1.9	0.2	0.8	1.9
01Jan2000	05:04	1.9	0.2	0.8	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	1.8	0.2	0.8	1.9
01Jan2000	05:06	1.8	0.2	0.8	1.9
01Jan2000	05:07	1.8	0.2	0.8	1.9
01Jan2000	05:08	1.8	0.2	0.8	1.8
01Jan2000	05:09	1.8	0.2	0.8	1.8
01Jan2000	05:10	1.7	0.2	0.8	1.8
01Jan2000	05:11	1.7	0.2	0.8	1.8
01Jan2000	05:12	1.7	0.2	0.8	1.7
01Jan2000	05:13	1.7	0.2	0.8	1.7
01Jan2000	05:14	1.6	0.2	0.8	1.7
01Jan2000	05:15	1.6	0.2	0.8	1.7
01Jan2000	05:16	1.6	0.2	0.8	1.6
01Jan2000	05:17	1.6	0.2	0.8	1.6
01Jan2000	05:18	1.6	0.2	0.8	1.6
01Jan2000	05:19	1.6	0.2	0.8	1.6
01Jan2000	05:20	1.6	0.2	0.8	1.6
01Jan2000	05:21	1.6	0.2	0.8	1.6
01Jan2000	05:22	1.6	0.2	0.8	1.6
01Jan2000	05:23	1.6	0.2	0.8	1.6
01Jan2000	05:24	1.6	0.2	0.8	1.6
01Jan2000	05:25	1.6	0.2	0.8	1.6
01Jan2000	05:26	1.5	0.2	0.8	1.6
01Jan2000	05:27	1.5	0.2	0.8	1.6
01Jan2000	05:28	1.5	0.2	0.8	1.5
01Jan2000	05:29	1.5	0.2	0.8	1.5
01Jan2000	05:30	1.5	0.2	0.8	1.5
01Jan2000	05:31	1.5	0.2	0.8	1.5
01Jan2000	05:32	1.5	0.2	0.8	1.5
01Jan2000	05:33	1.4	0.2	0.8	1.5
01Jan2000	05:34	1.4	0.2	0.8	1.5
01Jan2000	05:35	1.4	0.2	0.8	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	1.4	0.2	0.8	1.4
01Jan2000	05:37	1.4	0.2	0.8	1.4
01Jan2000	05:38	1.4	0.2	0.8	1.4
01Jan2000	05:39	1.4	0.2	0.8	1.4
01Jan2000	05:40	1.3	0.2	0.8	1.4
01Jan2000	05:41	1.3	0.2	0.8	1.3
01Jan2000	05:42	1.3	0.2	0.8	1.3
01Jan2000	05:43	1.3	0.2	0.8	1.3
01Jan2000	05:44	1.3	0.2	0.8	1.3
01Jan2000	05:45	1.3	0.2	0.8	1.3
01Jan2000	05:46	1.3	0.2	0.8	1.3
01Jan2000	05:47	1.3	0.2	0.8	1.3
01Jan2000	05:48	1.3	0.2	0.8	1.3
01Jan2000	05:49	1.3	0.2	0.8	1.3
01Jan2000	05:50	1.3	0.2	0.8	1.3
01Jan2000	05:51	1.3	0.2	0.8	1.3
01Jan2000	05:52	1.3	0.2	0.8	1.3
01Jan2000	05:53	1.3	0.2	0.8	1.3
01Jan2000	05:54	1.2	0.2	0.8	1.3
01Jan2000	05:55	1.2	0.2	0.8	1.2
01Jan2000	05:56	1.2	0.2	0.8	1.2
01Jan2000	05:57	1.2	0.2	0.8	1.2
01Jan2000	05:58	1.0	0.2	0.8	1.2
01Jan2000	05:59	0.9	0.2	0.8	1.1
01Jan2000	06:00	0.7	0.2	0.8	0.9
01Jan2000	06:01	0.5	0.2	0.8	0.7
01Jan2000	06:02	0.3	0.2	0.8	0.5
01Jan2000	06:03	0.2	0.2	0.8	0.3
01Jan2000	06:04	0.0	0.2	0.8	0.0

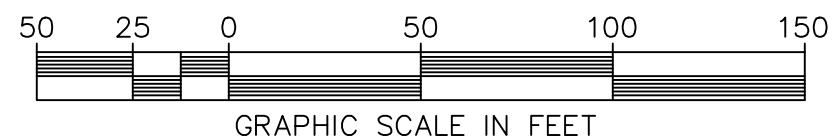


CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE

NOT TO SCALE



BASIN B - PROPOSED DETENTION 22 (BMP D1)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
836	0	10891	0.25	0.000
839	3	14015	0.32	0.855
840	4	15107	0.35	1.194

**NEWLAND SIERRA
BASIN B - PROPOSED DETENTION BASINS
DETENTION 22 (BMP D1)**

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 23.4

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2343	2342	2	1360	1305	100	0.34	0.12				
2342	2341	5	1305	890	900						
2342	2341	8				0.45	3.46				
2341	2340	5	890	820	520						
2341	2340	8				0.42	5.96				
2340	260	3	820	809	100						
260	260	1						1 OF 2			
270	268	2	846.6	844.1	80	0.9	0.08				
268	266	6	844.1	826.6	570	0.9	1.13	2 SIDES			
266	264	3	820	818	200						
264	262	5	818	817.8	20			VALLEY			
264	262	8				0.3	0.16				
262	260	3	812	809	245						
260	260	1						2 OF 2			
260	23.4	3	809	795	35						
							10.91				

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY *

* NO DETENTION *

* SUB-BASIN 23.4 *

FILE NAME: P-23-4.DAT

TIME/DATE OF STUDY: 14:19 11/17/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	39.0	20.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.50 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2343.00 TO NODE 2342.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3400

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1360.00

DOWNSTREAM ELEVATION(FEET) = 1305.00

ELEVATION DIFFERENCE(FEET) = 55.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.350

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.904

SUBAREA RUNOFF(CFS) = 0.32

TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.32

FLOW PROCESS FROM NODE 2342.00 TO NODE 2341.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1305.00 DOWNSTREAM(FEET) = 890.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 900.00 CHANNEL SLOPE = 0.4611

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .2211 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION

CHANNEL FLOW THRU SUBAREA(CFS) = 0.32

FLOW VELOCITY(FEET/SEC) = 2.63 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 5.70 Tc(MIN.) = 12.05

LONGEST FLOWPATH FROM NODE 2343.00 TO NODE 2341.00 = 1000.00 FEET.

FLOW PROCESS FROM NODE 2342.00 TO NODE 2341.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.230

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.4463

SUBAREA AREA(ACRES) = 3.46 SUBAREA RUNOFF(CFS) = 8.14

TOTAL AREA(ACRES) = 3.6 TOTAL RUNOFF(CFS) = 8.36

TC(MIN.) = 12.05

FLOW PROCESS FROM NODE 2341.00 TO NODE 2340.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	890.00	DOWNSTREAM(FEET) =	820.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	520.00	CHANNEL SLOPE =	0.1346
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.1247 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
CHANNEL FLOW THRU SUBAREA(CFS) =	8.36		
FLOW VELOCITY(FEET/SEC) =	4.01 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	2.16	Tc(MIN.) =	14.21
LONGEST FLOWPATH FROM NODE	2343.00	TO NODE	2340.00 = 1520.00 FEET.

FLOW PROCESS FROM NODE 2341.00 TO NODE 2340.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	4.702		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.4200		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.4299		
SUBAREA AREA(ACRES) =	5.96	SUBAREA RUNOFF(CFS) =	11.77
TOTAL AREA(ACRES) =	9.5	TOTAL RUNOFF(CFS) =	19.28
TC(MIN.) =	14.21		

FLOW PROCESS FROM NODE 2340.00 TO NODE 260.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	820.00	DOWNSTREAM(FEET) =	809.00
FLOW LENGTH(FEET) =	100.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000			
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.9 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.) =	19.42		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	19.28		
PIPE TRAVEL TIME(MIN.) =	0.09	Tc(MIN.) =	14.29
LONGEST FLOWPATH FROM NODE	2343.00	TO NODE	260.00 = 1620.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 14.29
 RAINFALL INTENSITY(INCH/HR) = 4.68
 TOTAL STREAM AREA(ACRES) = 9.54
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 19.28

FLOW PROCESS FROM NODE 270.00 TO NODE 268.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 846.60
 DOWNSTREAM ELEVATION(FEET) = 844.10
 ELEVATION DIFFERENCE(FEET) = 2.50
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.202
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 0.66
 TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.66

FLOW PROCESS FROM NODE 268.00 TO NODE 266.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 844.10 DOWNSTREAM ELEVATION(FEET) = 826.60
 STREET LENGTH(FEET) = 570.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.35

P-23-4

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.29
 HALFSTREET FLOOD WIDTH(FEET) = 8.03
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.51
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.01
 STREET FLOW TRAVEL TIME(MIN.) = 2.71 Tc(MIN.) = 4.91
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
 SUBAREA AREA(ACRES) = 1.13 SUBAREA RUNOFF(CFS) = 9.38
 TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 10.04

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.56
 FLOW VELOCITY(FEET/SEC.) = 4.07 DEPTH*VELOCITY(FT*FT/SEC.) = 1.37
 LONGEST FLOWPATH FROM NODE 270.00 TO NODE 266.00 = 650.00 FEET.

FLOW PROCESS FROM NODE 266.00 TO NODE 264.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 820.00 DOWNSTREAM(FEET) = 818.00
 FLOW LENGTH(FEET) = 200.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.69
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.04
 PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 5.41
 LONGEST FLOWPATH FROM NODE 270.00 TO NODE 264.00 = 850.00 FEET.

FLOW PROCESS FROM NODE 264.00 TO NODE 262.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 818.00 DOWNSTREAM(FEET) = 817.80
 CHANNEL LENGTH THRU SUBAREA(FEET) = 20.00 CHANNEL SLOPE = 0.0100
 CHANNEL FLOW THRU SUBAREA(CFS) = 10.04
 FLOW VELOCITY(FEET/SEC) = 2.50 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 5.54
 LONGEST FLOWPATH FROM NODE 270.00 TO NODE 262.00 = 870.00 FEET.

FLOW PROCESS FROM NODE 264.00 TO NODE 262.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.631

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.8299

SUBAREA AREA(ACRES) = 0.16 SUBAREA RUNOFF(CFS) = 0.41

TOTAL AREA(ACRES) = 1.4 TOTAL RUNOFF(CFS) = 10.04

TC(MIN.) = 5.54

NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

FLOW PROCESS FROM NODE 262.00 TO NODE 260.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 812.00 DOWNSTREAM(FEET) = 809.00

FLOW LENGTH(FEET) = 245.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 7.07

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 10.04

PIPE TRAVEL TIME(MIN.) = 0.58 Tc(MIN.) = 6.12

LONGEST FLOWPATH FROM NODE 270.00 TO NODE 260.00 = 1115.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 6.12

RAINFALL INTENSITY(INCH/HR) = 8.10

TOTAL STREAM AREA(ACRES) = 1.37

PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.04

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	19.28	14.29	4.684	9.54
2	10.04	6.12	8.096	1.37

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	18.30	6.12	8.096
2	25.09	14.29	4.684

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 25.09 T_c(MIN.) = 14.29

TOTAL AREA(ACRES) = 10.9

LONGEST FLOWPATH FROM NODE 2343.00 TO NODE 260.00 = 1620.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 23.40 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 809.00 DOWNSTREAM(FEET) = 795.00

FLOW LENGTH(FEET) = 35.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 33.64

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 25.09

PIPE TRAVEL TIME(MIN.) = 0.02 T_c(MIN.) = 14.31

LONGEST FLOWPATH FROM NODE 2343.00 TO NODE 23.40 = 1655.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 10.9 TC(MIN.) = 14.31

PEAK FLOW RATE(CFS) = 25.09

=====

END OF RATIONAL METHOD ANALYSIS

↑

Subbasin 23.4
Node 264

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 12/9/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 6 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 1.4 ACRES
RUNOFF COEFFICIENT 0.9
PEAK DISCHARGE 10 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 6	DISCHARGE (CFS) = 0.3
TIME (MIN) = 12	DISCHARGE (CFS) = 0.3
TIME (MIN) = 18	DISCHARGE (CFS) = 0.3
TIME (MIN) = 24	DISCHARGE (CFS) = 0.3
TIME (MIN) = 30	DISCHARGE (CFS) = 0.3
TIME (MIN) = 36	DISCHARGE (CFS) = 0.3
TIME (MIN) = 42	DISCHARGE (CFS) = 0.3
TIME (MIN) = 48	DISCHARGE (CFS) = 0.3
TIME (MIN) = 54	DISCHARGE (CFS) = 0.3
TIME (MIN) = 60	DISCHARGE (CFS) = 0.3
TIME (MIN) = 66	DISCHARGE (CFS) = 0.3
TIME (MIN) = 72	DISCHARGE (CFS) = 0.3
TIME (MIN) = 78	DISCHARGE (CFS) = 0.3
TIME (MIN) = 84	DISCHARGE (CFS) = 0.3
TIME (MIN) = 90	DISCHARGE (CFS) = 0.3
TIME (MIN) = 96	DISCHARGE (CFS) = 0.4
TIME (MIN) = 102	DISCHARGE (CFS) = 0.4
TIME (MIN) = 108	DISCHARGE (CFS) = 0.4
TIME (MIN) = 114	DISCHARGE (CFS) = 0.4
TIME (MIN) = 120	DISCHARGE (CFS) = 0.4
TIME (MIN) = 126	DISCHARGE (CFS) = 0.4
TIME (MIN) = 132	DISCHARGE (CFS) = 0.4
TIME (MIN) = 138	DISCHARGE (CFS) = 0.4
TIME (MIN) = 144	DISCHARGE (CFS) = 0.5
TIME (MIN) = 150	DISCHARGE (CFS) = 0.5
TIME (MIN) = 156	DISCHARGE (CFS) = 0.5
TIME (MIN) = 162	DISCHARGE (CFS) = 0.5
TIME (MIN) = 168	DISCHARGE (CFS) = 0.5
TIME (MIN) = 174	DISCHARGE (CFS) = 0.6
TIME (MIN) = 180	DISCHARGE (CFS) = 0.6

TIME (MIN)	=	186	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	192	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	198	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	204	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	210	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	216	DISCHARGE (CFS)	=	1
TIME (MIN)	=	222	DISCHARGE (CFS)	=	1.2
TIME (MIN)	=	228	DISCHARGE (CFS)	=	1.4
TIME (MIN)	=	234	DISCHARGE (CFS)	=	2
TIME (MIN)	=	240	DISCHARGE (CFS)	=	3.2
TIME (MIN)	=	246	DISCHARGE (CFS)	=	10
TIME (MIN)	=	252	DISCHARGE (CFS)	=	1.6
TIME (MIN)	=	258	DISCHARGE (CFS)	=	1.1
TIME (MIN)	=	264	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	270	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	276	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	282	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	288	DISCHARGE (CFS)	=	0.5
TIME (MIN)	=	294	DISCHARGE (CFS)	=	0.5
TIME (MIN)	=	300	DISCHARGE (CFS)	=	0.4
TIME (MIN)	=	306	DISCHARGE (CFS)	=	0.4
TIME (MIN)	=	312	DISCHARGE (CFS)	=	0.4
TIME (MIN)	=	318	DISCHARGE (CFS)	=	0.4
TIME (MIN)	=	324	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	330	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	336	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	342	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	348	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	354	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	360	DISCHARGE (CFS)	=	0.3
TIME (MIN)	=	366	DISCHARGE (CFS)	=	0

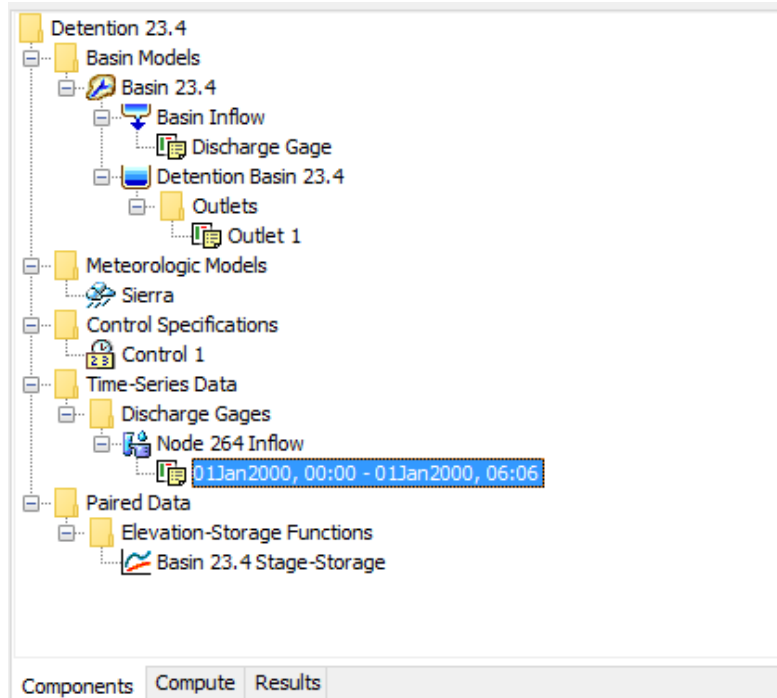
Detention 23.4 Proposed

HEC-HMS Input

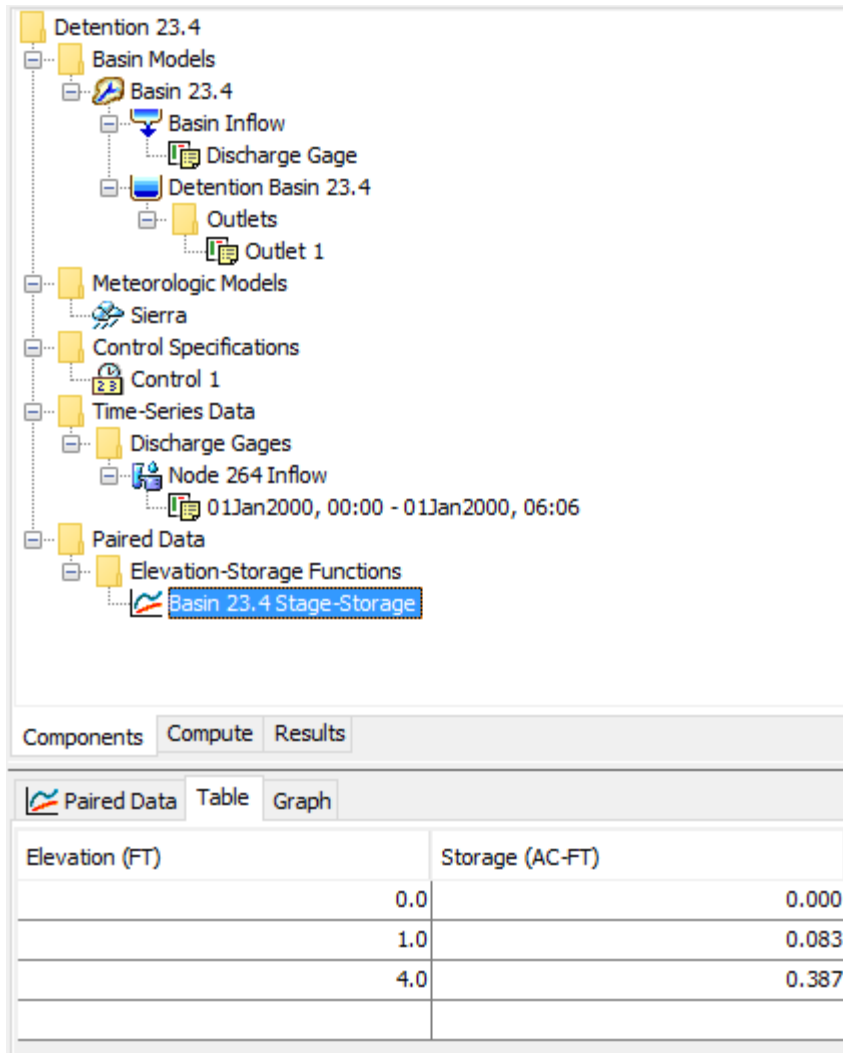
The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing the configuration for the selected 'Basin Inflow' element. The configuration panel has three sub-tabs: 'Source', 'Inflow', and 'Options'. The 'Source' sub-tab is active, showing the following details:

- Basin Name:** Basin 23.4
- Element Name:** Basin Inflow
- Description:** Node 264
- Downstream:** Detention Basin 23.4
- Area (MI2):** 0.0022
- Flow Method:** Discharge Gage

Each input field has a small icon to its right, likely for opening a file or selecting a value.



Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.0
01Jan2000, 00:06	0.3
01Jan2000, 00:12	0.3
01Jan2000, 00:18	0.3
01Jan2000, 00:24	0.3
01Jan2000, 00:30	0.3
01Jan2000, 00:36	0.3
01Jan2000, 00:42	0.3
01Jan2000, 00:48	0.3
01Jan2000, 00:54	0.3
01Jan2000, 01:00	0.3
01Jan2000, 01:06	0.3
01Jan2000, 01:12	0.3
01Jan2000, 01:18	0.3
01Jan2000, 01:24	0.3
01Jan2000, 01:30	0.3
01Jan2000, 01:36	0.4
01Jan2000, 01:42	0.4
01Jan2000, 01:48	0.4
01Jan2000, 01:54	0.4
01Jan2000, 02:00	0.4
01Jan2000, 02:06	0.4
01Jan2000, 02:12	0.4
01Jan2000, 02:18	0.4
01Jan2000, 02:24	0.5



Project: Detention 23.4 Simulation Run: Run 1
Reservoir: Detention Basin 23.4

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 23.4
End of Run:	01Jan2000, 06:06	Meteorologic Model:	Sierra
Compute Time:	16Jan2017, 17:16:12	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	10.0 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:06
Peak Discharge:	1.2 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:17
Inflow Volume:	0.4 (AC-FT)	Peak Storage:	0.2 (AC-FT)
Discharge Volume:	0.3 (AC-FT)	Peak Elevation:	1.9 (FT)

Project: Detention 23.4 Simulation Run: Run 1
Reservoir: Detention Basin 23.4

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 23.4
End of Run: 01Jan2000, 06:06 Meteorologic Model: Sierra
Compute Time: 16Jan2017, 17:16:12 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.0	0.0	0.0	0.0
01Jan2000	00:02	0.1	0.0	0.0	0.0
01Jan2000	00:03	0.2	0.0	0.0	0.0
01Jan2000	00:04	0.2	0.0	0.0	0.0
01Jan2000	00:05	0.2	0.0	0.0	0.0
01Jan2000	00:06	0.3	0.0	0.0	0.0
01Jan2000	00:07	0.3	0.0	0.0	0.0
01Jan2000	00:08	0.3	0.0	0.0	0.0
01Jan2000	00:09	0.3	0.0	0.0	0.0
01Jan2000	00:10	0.3	0.0	0.0	0.0
01Jan2000	00:11	0.3	0.0	0.0	0.0
01Jan2000	00:12	0.3	0.0	0.0	0.0
01Jan2000	00:13	0.3	0.0	0.0	0.0
01Jan2000	00:14	0.3	0.0	0.1	0.0
01Jan2000	00:15	0.3	0.0	0.1	0.0
01Jan2000	00:16	0.3	0.0	0.1	0.0
01Jan2000	00:17	0.3	0.0	0.1	0.0
01Jan2000	00:18	0.3	0.0	0.1	0.0
01Jan2000	00:19	0.3	0.0	0.1	0.0
01Jan2000	00:20	0.3	0.0	0.1	0.0
01Jan2000	00:21	0.3	0.0	0.1	0.0
01Jan2000	00:22	0.3	0.0	0.1	0.0
01Jan2000	00:23	0.3	0.0	0.1	0.0
01Jan2000	00:24	0.3	0.0	0.1	0.0
01Jan2000	00:25	0.3	0.0	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	0.3	0.0	0.1	0.0
01Jan2000	00:27	0.3	0.0	0.1	0.0
01Jan2000	00:28	0.3	0.0	0.1	0.0
01Jan2000	00:29	0.3	0.0	0.1	0.0
01Jan2000	00:30	0.3	0.0	0.1	0.0
01Jan2000	00:31	0.3	0.0	0.1	0.0
01Jan2000	00:32	0.3	0.0	0.1	0.0
01Jan2000	00:33	0.3	0.0	0.1	0.0
01Jan2000	00:34	0.3	0.0	0.2	0.0
01Jan2000	00:35	0.3	0.0	0.2	0.0
01Jan2000	00:36	0.3	0.0	0.2	0.0
01Jan2000	00:37	0.3	0.0	0.2	0.0
01Jan2000	00:38	0.3	0.0	0.2	0.0
01Jan2000	00:39	0.3	0.0	0.2	0.0
01Jan2000	00:40	0.3	0.0	0.2	0.0
01Jan2000	00:41	0.3	0.0	0.2	0.0
01Jan2000	00:42	0.3	0.0	0.2	0.0
01Jan2000	00:43	0.3	0.0	0.2	0.0
01Jan2000	00:44	0.3	0.0	0.2	0.0
01Jan2000	00:45	0.3	0.0	0.2	0.0
01Jan2000	00:46	0.3	0.0	0.2	0.0
01Jan2000	00:47	0.3	0.0	0.2	0.0
01Jan2000	00:48	0.3	0.0	0.2	0.0
01Jan2000	00:49	0.3	0.0	0.2	0.0
01Jan2000	00:50	0.3	0.0	0.2	0.0
01Jan2000	00:51	0.3	0.0	0.2	0.0
01Jan2000	00:52	0.3	0.0	0.2	0.0
01Jan2000	00:53	0.3	0.0	0.2	0.0
01Jan2000	00:54	0.3	0.0	0.3	0.1
01Jan2000	00:55	0.3	0.0	0.3	0.1
01Jan2000	00:56	0.3	0.0	0.3	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	0.3	0.0	0.3	0.1
01Jan2000	00:58	0.3	0.0	0.3	0.1
01Jan2000	00:59	0.3	0.0	0.3	0.1
01Jan2000	01:00	0.3	0.0	0.3	0.1
01Jan2000	01:01	0.3	0.0	0.3	0.1
01Jan2000	01:02	0.3	0.0	0.3	0.2
01Jan2000	01:03	0.3	0.0	0.3	0.2
01Jan2000	01:04	0.3	0.0	0.3	0.2
01Jan2000	01:05	0.3	0.0	0.3	0.2
01Jan2000	01:06	0.3	0.0	0.3	0.2
01Jan2000	01:07	0.3	0.0	0.3	0.2
01Jan2000	01:08	0.3	0.0	0.3	0.2
01Jan2000	01:09	0.3	0.0	0.3	0.2
01Jan2000	01:10	0.3	0.0	0.3	0.2
01Jan2000	01:11	0.3	0.0	0.3	0.2
01Jan2000	01:12	0.3	0.0	0.3	0.2
01Jan2000	01:13	0.3	0.0	0.3	0.2
01Jan2000	01:14	0.3	0.0	0.3	0.2
01Jan2000	01:15	0.3	0.0	0.3	0.2
01Jan2000	01:16	0.3	0.0	0.3	0.2
01Jan2000	01:17	0.3	0.0	0.3	0.2
01Jan2000	01:18	0.3	0.0	0.3	0.2
01Jan2000	01:19	0.3	0.0	0.3	0.2
01Jan2000	01:20	0.3	0.0	0.3	0.2
01Jan2000	01:21	0.3	0.0	0.3	0.2
01Jan2000	01:22	0.3	0.0	0.3	0.2
01Jan2000	01:23	0.3	0.0	0.3	0.2
01Jan2000	01:24	0.3	0.0	0.3	0.2
01Jan2000	01:25	0.3	0.0	0.3	0.2
01Jan2000	01:26	0.3	0.0	0.3	0.2
01Jan2000	01:27	0.3	0.0	0.3	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	0.3	0.0	0.3	0.2
01Jan2000	01:29	0.3	0.0	0.3	0.2
01Jan2000	01:30	0.3	0.0	0.3	0.2
01Jan2000	01:31	0.3	0.0	0.3	0.2
01Jan2000	01:32	0.3	0.0	0.3	0.3
01Jan2000	01:33	0.4	0.0	0.3	0.3
01Jan2000	01:34	0.4	0.0	0.3	0.3
01Jan2000	01:35	0.4	0.0	0.3	0.3
01Jan2000	01:36	0.4	0.0	0.3	0.3
01Jan2000	01:37	0.4	0.0	0.3	0.3
01Jan2000	01:38	0.4	0.0	0.3	0.3
01Jan2000	01:39	0.4	0.0	0.3	0.3
01Jan2000	01:40	0.4	0.0	0.3	0.3
01Jan2000	01:41	0.4	0.0	0.3	0.3
01Jan2000	01:42	0.4	0.0	0.3	0.3
01Jan2000	01:43	0.4	0.0	0.3	0.3
01Jan2000	01:44	0.4	0.0	0.3	0.3
01Jan2000	01:45	0.4	0.0	0.3	0.3
01Jan2000	01:46	0.4	0.0	0.3	0.3
01Jan2000	01:47	0.4	0.0	0.3	0.3
01Jan2000	01:48	0.4	0.0	0.4	0.3
01Jan2000	01:49	0.4	0.0	0.4	0.3
01Jan2000	01:50	0.4	0.0	0.4	0.3
01Jan2000	01:51	0.4	0.0	0.4	0.3
01Jan2000	01:52	0.4	0.0	0.4	0.3
01Jan2000	01:53	0.4	0.0	0.4	0.3
01Jan2000	01:54	0.4	0.0	0.4	0.3
01Jan2000	01:55	0.4	0.0	0.4	0.3
01Jan2000	01:56	0.4	0.0	0.4	0.3
01Jan2000	01:57	0.4	0.0	0.4	0.3
01Jan2000	01:58	0.4	0.0	0.4	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	0.4	0.0	0.4	0.3
01Jan2000	02:00	0.4	0.0	0.4	0.3
01Jan2000	02:01	0.4	0.0	0.4	0.3
01Jan2000	02:02	0.4	0.0	0.4	0.3
01Jan2000	02:03	0.4	0.0	0.4	0.3
01Jan2000	02:04	0.4	0.0	0.4	0.3
01Jan2000	02:05	0.4	0.0	0.4	0.3
01Jan2000	02:06	0.4	0.0	0.4	0.3
01Jan2000	02:07	0.4	0.0	0.4	0.3
01Jan2000	02:08	0.4	0.0	0.4	0.3
01Jan2000	02:09	0.4	0.0	0.4	0.3
01Jan2000	02:10	0.4	0.0	0.4	0.3
01Jan2000	02:11	0.4	0.0	0.4	0.3
01Jan2000	02:12	0.4	0.0	0.4	0.3
01Jan2000	02:13	0.4	0.0	0.4	0.3
01Jan2000	02:14	0.4	0.0	0.4	0.3
01Jan2000	02:15	0.4	0.0	0.4	0.3
01Jan2000	02:16	0.4	0.0	0.4	0.3
01Jan2000	02:17	0.4	0.0	0.4	0.3
01Jan2000	02:18	0.4	0.0	0.4	0.3
01Jan2000	02:19	0.4	0.0	0.4	0.4
01Jan2000	02:20	0.4	0.0	0.4	0.4
01Jan2000	02:21	0.4	0.0	0.4	0.4
01Jan2000	02:22	0.5	0.0	0.4	0.4
01Jan2000	02:23	0.5	0.0	0.4	0.4
01Jan2000	02:24	0.5	0.0	0.4	0.4
01Jan2000	02:25	0.5	0.0	0.4	0.4
01Jan2000	02:26	0.5	0.0	0.4	0.4
01Jan2000	02:27	0.5	0.0	0.4	0.4
01Jan2000	02:28	0.5	0.0	0.4	0.4
01Jan2000	02:29	0.5	0.0	0.4	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	0.5	0.0	0.4	0.4
01Jan2000	02:31	0.5	0.0	0.4	0.4
01Jan2000	02:32	0.5	0.0	0.4	0.4
01Jan2000	02:33	0.5	0.0	0.4	0.4
01Jan2000	02:34	0.5	0.0	0.4	0.4
01Jan2000	02:35	0.5	0.0	0.4	0.4
01Jan2000	02:36	0.5	0.0	0.4	0.4
01Jan2000	02:37	0.5	0.0	0.4	0.4
01Jan2000	02:38	0.5	0.0	0.4	0.4
01Jan2000	02:39	0.5	0.0	0.4	0.4
01Jan2000	02:40	0.5	0.0	0.4	0.4
01Jan2000	02:41	0.5	0.0	0.4	0.4
01Jan2000	02:42	0.5	0.0	0.4	0.4
01Jan2000	02:43	0.5	0.0	0.4	0.4
01Jan2000	02:44	0.5	0.0	0.4	0.4
01Jan2000	02:45	0.5	0.0	0.4	0.4
01Jan2000	02:46	0.5	0.0	0.4	0.4
01Jan2000	02:47	0.5	0.0	0.4	0.4
01Jan2000	02:48	0.5	0.0	0.4	0.4
01Jan2000	02:49	0.5	0.0	0.4	0.4
01Jan2000	02:50	0.5	0.0	0.4	0.4
01Jan2000	02:51	0.6	0.0	0.4	0.4
01Jan2000	02:52	0.6	0.0	0.4	0.4
01Jan2000	02:53	0.6	0.0	0.5	0.4
01Jan2000	02:54	0.6	0.0	0.5	0.4
01Jan2000	02:55	0.6	0.0	0.5	0.4
01Jan2000	02:56	0.6	0.0	0.5	0.4
01Jan2000	02:57	0.6	0.0	0.5	0.4
01Jan2000	02:58	0.6	0.0	0.5	0.4
01Jan2000	02:59	0.6	0.0	0.5	0.4
01Jan2000	03:00	0.6	0.0	0.5	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	0.6	0.0	0.5	0.4
01Jan2000	03:02	0.6	0.0	0.5	0.4
01Jan2000	03:03	0.6	0.0	0.5	0.5
01Jan2000	03:04	0.7	0.0	0.5	0.5
01Jan2000	03:05	0.7	0.0	0.5	0.5
01Jan2000	03:06	0.7	0.0	0.5	0.5
01Jan2000	03:07	0.7	0.0	0.5	0.5
01Jan2000	03:08	0.7	0.0	0.5	0.5
01Jan2000	03:09	0.7	0.0	0.5	0.5
01Jan2000	03:10	0.7	0.0	0.5	0.5
01Jan2000	03:11	0.7	0.0	0.5	0.5
01Jan2000	03:12	0.7	0.0	0.5	0.5
01Jan2000	03:13	0.7	0.0	0.5	0.5
01Jan2000	03:14	0.7	0.0	0.5	0.5
01Jan2000	03:15	0.7	0.0	0.5	0.5
01Jan2000	03:16	0.8	0.0	0.5	0.5
01Jan2000	03:17	0.8	0.0	0.5	0.5
01Jan2000	03:18	0.8	0.0	0.5	0.5
01Jan2000	03:19	0.8	0.0	0.5	0.5
01Jan2000	03:20	0.8	0.0	0.5	0.5
01Jan2000	03:21	0.8	0.0	0.6	0.5
01Jan2000	03:22	0.8	0.0	0.6	0.5
01Jan2000	03:23	0.8	0.0	0.6	0.5
01Jan2000	03:24	0.8	0.0	0.6	0.5
01Jan2000	03:25	0.8	0.0	0.6	0.5
01Jan2000	03:26	0.8	0.0	0.6	0.5
01Jan2000	03:27	0.9	0.0	0.6	0.5
01Jan2000	03:28	0.9	0.0	0.6	0.5
01Jan2000	03:29	0.9	0.0	0.6	0.6
01Jan2000	03:30	0.9	0.0	0.6	0.6
01Jan2000	03:31	0.9	0.1	0.6	0.6

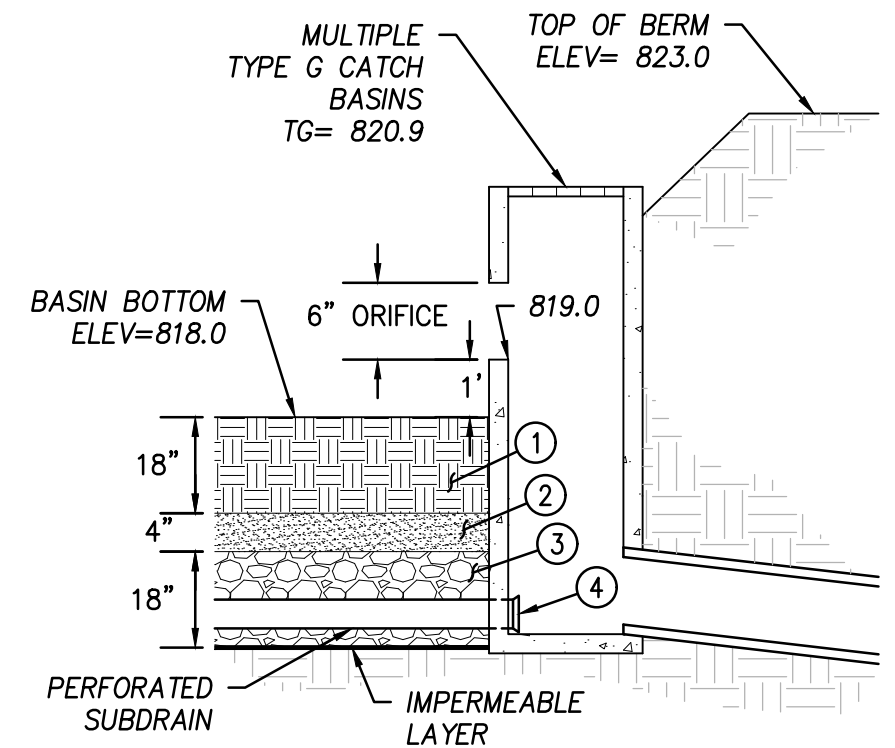
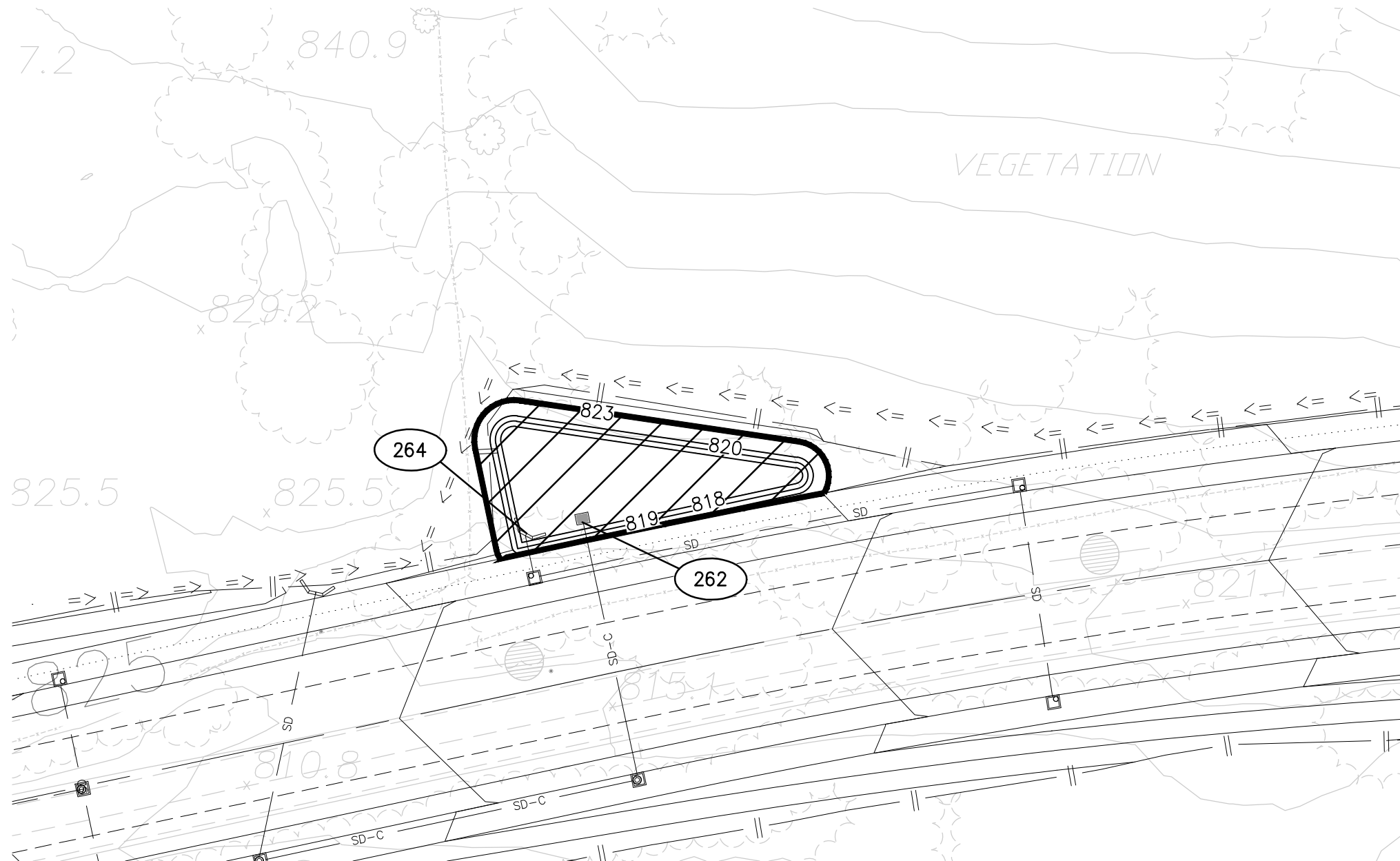
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	0.9	0.1	0.6	0.6
01Jan2000	03:33	1.0	0.1	0.6	0.6
01Jan2000	03:34	1.0	0.1	0.6	0.6
01Jan2000	03:35	1.0	0.1	0.6	0.6
01Jan2000	03:36	1.0	0.1	0.6	0.6
01Jan2000	03:37	1.0	0.1	0.6	0.6
01Jan2000	03:38	1.1	0.1	0.6	0.6
01Jan2000	03:39	1.1	0.1	0.7	0.6
01Jan2000	03:40	1.1	0.1	0.7	0.6
01Jan2000	03:41	1.2	0.1	0.7	0.6
01Jan2000	03:42	1.2	0.1	0.7	0.6
01Jan2000	03:43	1.2	0.1	0.7	0.6
01Jan2000	03:44	1.3	0.1	0.7	0.6
01Jan2000	03:45	1.3	0.1	0.7	0.6
01Jan2000	03:46	1.3	0.1	0.7	0.7
01Jan2000	03:47	1.4	0.1	0.7	0.7
01Jan2000	03:48	1.4	0.1	0.7	0.7
01Jan2000	03:49	1.5	0.1	0.8	0.7
01Jan2000	03:50	1.6	0.1	0.8	0.7
01Jan2000	03:51	1.7	0.1	0.8	0.7
01Jan2000	03:52	1.8	0.1	0.8	0.7
01Jan2000	03:53	1.9	0.1	0.8	0.7
01Jan2000	03:54	2.0	0.1	0.8	0.7
01Jan2000	03:55	2.2	0.1	0.9	0.7
01Jan2000	03:56	2.4	0.1	0.9	0.8
01Jan2000	03:57	2.6	0.1	0.9	0.8
01Jan2000	03:58	2.8	0.1	1.0	0.8
01Jan2000	03:59	3.0	0.1	1.0	0.8
01Jan2000	04:00	3.2	0.1	1.0	0.8
01Jan2000	04:01	4.3	0.1	1.1	0.9
01Jan2000	04:02	5.5	0.1	1.1	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	6.6	0.1	1.2	0.9
01Jan2000	04:04	7.7	0.1	1.3	1.0
01Jan2000	04:05	8.9	0.1	1.4	1.0
01Jan2000	04:06	10.0	0.1	1.5	1.0
01Jan2000	04:07	8.6	0.1	1.6	1.1
01Jan2000	04:08	7.2	0.2	1.7	1.1
01Jan2000	04:09	5.8	0.2	1.8	1.2
01Jan2000	04:10	4.4	0.2	1.8	1.2
01Jan2000	04:11	3.0	0.2	1.9	1.2
01Jan2000	04:12	1.6	0.2	1.9	1.2
01Jan2000	04:13	1.5	0.2	1.9	1.2
01Jan2000	04:14	1.4	0.2	1.9	1.2
01Jan2000	04:15	1.4	0.2	1.9	1.2
01Jan2000	04:16	1.3	0.2	1.9	1.2
01Jan2000	04:17	1.2	0.2	1.9	1.2
01Jan2000	04:18	1.1	0.2	1.9	1.2
01Jan2000	04:19	1.1	0.2	1.9	1.2
01Jan2000	04:20	1.0	0.2	1.9	1.2
01Jan2000	04:21	1.0	0.2	1.9	1.2
01Jan2000	04:22	1.0	0.2	1.9	1.2
01Jan2000	04:23	0.9	0.2	1.9	1.2
01Jan2000	04:24	0.9	0.2	1.9	1.2
01Jan2000	04:25	0.9	0.2	1.9	1.2
01Jan2000	04:26	0.8	0.2	1.9	1.2
01Jan2000	04:27	0.8	0.2	1.8	1.2
01Jan2000	04:28	0.8	0.2	1.8	1.2
01Jan2000	04:29	0.7	0.2	1.8	1.2
01Jan2000	04:30	0.7	0.2	1.8	1.2
01Jan2000	04:31	0.7	0.2	1.8	1.2
01Jan2000	04:32	0.7	0.2	1.8	1.2
01Jan2000	04:33	0.6	0.2	1.8	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	0.6	0.2	1.8	1.2
01Jan2000	04:35	0.6	0.2	1.8	1.2
01Jan2000	04:36	0.6	0.2	1.8	1.2
01Jan2000	04:37	0.6	0.2	1.8	1.2
01Jan2000	04:38	0.6	0.2	1.8	1.2
01Jan2000	04:39	0.6	0.2	1.8	1.2
01Jan2000	04:40	0.6	0.2	1.8	1.2
01Jan2000	04:41	0.6	0.2	1.7	1.2
01Jan2000	04:42	0.6	0.2	1.7	1.2
01Jan2000	04:43	0.6	0.2	1.7	1.1
01Jan2000	04:44	0.6	0.2	1.7	1.1
01Jan2000	04:45	0.6	0.2	1.7	1.1
01Jan2000	04:46	0.5	0.2	1.7	1.1
01Jan2000	04:47	0.5	0.2	1.7	1.1
01Jan2000	04:48	0.5	0.2	1.7	1.1
01Jan2000	04:49	0.5	0.2	1.7	1.1
01Jan2000	04:50	0.5	0.2	1.7	1.1
01Jan2000	04:51	0.5	0.2	1.7	1.1
01Jan2000	04:52	0.5	0.1	1.7	1.1
01Jan2000	04:53	0.5	0.1	1.7	1.1
01Jan2000	04:54	0.5	0.1	1.6	1.1
01Jan2000	04:55	0.5	0.1	1.6	1.1
01Jan2000	04:56	0.5	0.1	1.6	1.1
01Jan2000	04:57	0.4	0.1	1.6	1.1
01Jan2000	04:58	0.4	0.1	1.6	1.1
01Jan2000	04:59	0.4	0.1	1.6	1.1
01Jan2000	05:00	0.4	0.1	1.6	1.1
01Jan2000	05:01	0.4	0.1	1.6	1.1
01Jan2000	05:02	0.4	0.1	1.6	1.1
01Jan2000	05:03	0.4	0.1	1.6	1.1
01Jan2000	05:04	0.4	0.1	1.6	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	0.4	0.1	1.5	1.1
01Jan2000	05:06	0.4	0.1	1.5	1.1
01Jan2000	05:07	0.4	0.1	1.5	1.1
01Jan2000	05:08	0.4	0.1	1.5	1.1
01Jan2000	05:09	0.4	0.1	1.5	1.1
01Jan2000	05:10	0.4	0.1	1.5	1.1
01Jan2000	05:11	0.4	0.1	1.5	1.1
01Jan2000	05:12	0.4	0.1	1.5	1.0
01Jan2000	05:13	0.4	0.1	1.5	1.0
01Jan2000	05:14	0.4	0.1	1.5	1.0
01Jan2000	05:15	0.4	0.1	1.5	1.0
01Jan2000	05:16	0.4	0.1	1.4	1.0
01Jan2000	05:17	0.4	0.1	1.4	1.0
01Jan2000	05:18	0.4	0.1	1.4	1.0
01Jan2000	05:19	0.4	0.1	1.4	1.0
01Jan2000	05:20	0.4	0.1	1.4	1.0
01Jan2000	05:21	0.4	0.1	1.4	1.0
01Jan2000	05:22	0.3	0.1	1.4	1.0
01Jan2000	05:23	0.3	0.1	1.4	1.0
01Jan2000	05:24	0.3	0.1	1.4	1.0
01Jan2000	05:25	0.3	0.1	1.4	1.0
01Jan2000	05:26	0.3	0.1	1.4	1.0
01Jan2000	05:27	0.3	0.1	1.3	1.0
01Jan2000	05:28	0.3	0.1	1.3	1.0
01Jan2000	05:29	0.3	0.1	1.3	1.0
01Jan2000	05:30	0.3	0.1	1.3	1.0
01Jan2000	05:31	0.3	0.1	1.3	1.0
01Jan2000	05:32	0.3	0.1	1.3	1.0
01Jan2000	05:33	0.3	0.1	1.3	1.0
01Jan2000	05:34	0.3	0.1	1.3	1.0
01Jan2000	05:35	0.3	0.1	1.3	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	0.3	0.1	1.3	1.0
01Jan2000	05:37	0.3	0.1	1.3	0.9
01Jan2000	05:38	0.3	0.1	1.2	0.9
01Jan2000	05:39	0.3	0.1	1.2	0.9
01Jan2000	05:40	0.3	0.1	1.2	0.9
01Jan2000	05:41	0.3	0.1	1.2	0.9
01Jan2000	05:42	0.3	0.1	1.2	0.9
01Jan2000	05:43	0.3	0.1	1.2	0.9
01Jan2000	05:44	0.3	0.1	1.2	0.9
01Jan2000	05:45	0.3	0.1	1.2	0.9
01Jan2000	05:46	0.3	0.1	1.2	0.9
01Jan2000	05:47	0.3	0.1	1.2	0.9
01Jan2000	05:48	0.3	0.1	1.2	0.9
01Jan2000	05:49	0.3	0.1	1.2	0.9
01Jan2000	05:50	0.3	0.1	1.1	0.9
01Jan2000	05:51	0.3	0.1	1.1	0.9
01Jan2000	05:52	0.3	0.1	1.1	0.9
01Jan2000	05:53	0.3	0.1	1.1	0.9
01Jan2000	05:54	0.3	0.1	1.1	0.9
01Jan2000	05:55	0.3	0.1	1.1	0.9
01Jan2000	05:56	0.3	0.1	1.1	0.9
01Jan2000	05:57	0.3	0.1	1.1	0.9
01Jan2000	05:58	0.3	0.1	1.1	0.9
01Jan2000	05:59	0.3	0.1	1.1	0.9
01Jan2000	06:00	0.3	0.1	1.1	0.9
01Jan2000	06:01	0.2	0.1	1.1	0.8
01Jan2000	06:02	0.2	0.1	1.1	0.8
01Jan2000	06:03	0.2	0.1	1.0	0.8
01Jan2000	06:04	0.1	0.1	1.0	0.8
01Jan2000	06:05	0.0	0.1	1.0	0.8
01Jan2000	06:06	0.0	0.1	1.0	0.8



CONSTRUCTION NOTES:

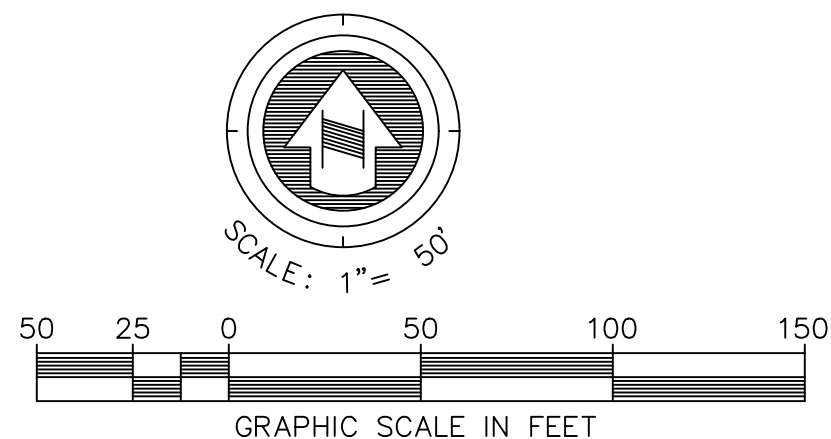
- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE

NOT TO SCALE

BASIN B - PROPOSED DETENTION 23.4 (BMP D2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
819	0	3306	0.08	0.000
820	1	3883	0.09	0.083
823	4	5130	0.12	0.387

NEWLAND SIERRA BASIN B - PROPOSED DETENTION BASINS DETENTION 23.4 (BMP D2)



APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 23

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2304	2303	2	1325	1268	100	0.35	1.04				
2303	2301	5	1268	863	1070			MTN			
2303	2301	8				0.35	7.47				
2301	2300	5	863	803	480			MTN			
2301	2300	8				0.45	15.54				
2300	23.01	3	803	797.5	100						
23.01	23.01	10						SAVE TO BANK 1			
23.9	23.8	2	826.6	823.2	80	0.9	0.10				
23.8	23.04	6	823.2	809.5	650	0.9	2.35	2 SIDES			
23.04	23.04	1						1 OF 2			
23.7	23.6	2	814.7	814	85	0.9	0.17				
23.6	23.5	6	814	812.9	355	0.9	0.79	2 SIDES			
23.5	23.04	3	807	803	400						
23.04	23.04	1						2 OF 2			
23.04	23.03	3	803	800	75						
23.03	23.02	5	800	799.5	35			VALLEY			
23.03	23.02	8				0.3	0.61				
23.02	23.01	3	799.5	797.5	190						
23.01	23.01	11						ADD BANK 1			
23.01	23	3	797.5	790	35						
							28.07				

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY *
* NO DETENTION *
* SUB-BASIN 23 *

FILE NAME: P-23.DAT

TIME/DATE OF STUDY: 14:01 11/17/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	39.0	20.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.50 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2304.00 TO NODE 2303.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1325.00

DOWNSTREAM ELEVATION(FEET) = 1268.00

ELEVATION DIFFERENCE(FEET) = 57.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

SUBAREA RUNOFF(CFS) = 2.90

TOTAL AREA(ACRES) = 1.04 TOTAL RUNOFF(CFS) = 2.90

FLOW PROCESS FROM NODE 2303.00 TO NODE 2301.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 863.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1070.00 CHANNEL SLOPE = 0.3785

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .2102 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 2.90

FLOW VELOCITY(FEET/SEC) = 3.66 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 4.87 Tc(MIN.) = 11.14

LONGEST FLOWPATH FROM NODE 2304.00 TO NODE 2301.00 = 1170.00 FEET.

FLOW PROCESS FROM NODE 2303.00 TO NODE 2301.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.501

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 7.47 SUBAREA RUNOFF(CFS) = 14.38

TOTAL AREA(ACRES) = 8.5 TOTAL RUNOFF(CFS) = 16.39

TC(MIN.) = 11.14

 FLOW PROCESS FROM NODE 2301.00 TO NODE 2300.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	863.00	DOWNSTREAM(FEET) =	803.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	480.00	CHANNEL SLOPE =	0.1250
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.1183 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
CHANNEL FLOW THRU SUBAREA(CFS) =	16.39		
FLOW VELOCITY(FEET/SEC) =	4.89 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	1.64	Tc(MIN.) =	12.77
LONGEST FLOWPATH FROM NODE 2304.00 TO NODE 2300.00 =	1650.00 FEET.		

 FLOW PROCESS FROM NODE 2301.00 TO NODE 2300.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.036		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.4500		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.4146		
SUBAREA AREA(ACRES) =	15.54	SUBAREA RUNOFF(CFS) =	35.21
TOTAL AREA(ACRES) =	24.0	TOTAL RUNOFF(CFS) =	50.21
TC(MIN.) =	12.77		

 FLOW PROCESS FROM NODE 2300.00 TO NODE 23.01 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	803.00	DOWNSTREAM(FEET) =	797.50
FLOW LENGTH(FEET) =	100.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.6 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.) =	18.26		
ESTIMATED PIPE DIAMETER(INCH) =	24.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	50.21		
PIPE TRAVEL TIME(MIN.) =	0.09	Tc(MIN.) =	12.87
LONGEST FLOWPATH FROM NODE 2304.00 TO NODE 23.01 =	1750.00 FEET.		

 FLOW PROCESS FROM NODE 23.01 TO NODE 23.01 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

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*****
FLOW PROCESS FROM NODE      23.90 TO NODE      23.80 IS CODE =  21
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```
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
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```
*USER SPECIFIED(SUBAREA):
```

```
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
```

```
S.C.S. CURVE NUMBER (AMC II) =  0
```

```
INITIAL SUBAREA FLOW-LENGTH(FEET) =  80.00
```

```
UPSTREAM ELEVATION(FEET) =  826.60
```

```
DOWNSTREAM ELEVATION(FEET) =  823.20
```

```
ELEVATION DIFFERENCE(FEET) =  3.40
```

```
SUBAREA OVERLAND TIME OF FLOW(MIN.) =  1.988
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  9.222
```

```
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
```

```
SUBAREA RUNOFF(CFS) =  0.83
```

```
TOTAL AREA(ACRES) =  0.10  TOTAL RUNOFF(CFS) =  0.83
```

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FLOW PROCESS FROM NODE      23.80 TO NODE      23.04 IS CODE =  62
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```
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
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>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
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```
UPSTREAM ELEVATION(FEET) =  823.20  DOWNSTREAM ELEVATION(FEET) =  809.50
```

```
STREET LENGTH(FEET) =  650.00  CURB HEIGHT(INCHES) =  6.0
```

```
STREET HALFWIDTH(FEET) =  39.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  20.00
```

```
INSIDE STREET CROSSFALL(DECIMAL) =  0.020
```

```
OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
```

```
STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
```

```
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) =  0.0150
```

```
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  10.53
```

```
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
```

```
STREET FLOW DEPTH(FEET) =  0.36
```

```
HALFSTREET FLOOD WIDTH(FEET) =  11.65
```

```
AVERAGE FLOW VELOCITY(FEET/SEC.) =  3.57
```

```
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  1.28
```

```
STREET FLOW TRAVEL TIME(MIN.) =  3.04  Tc(MIN.) =  5.02
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  9.192
```

```
*USER SPECIFIED(SUBAREA):
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USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 2.35 SUBAREA RUNOFF(CFS) = 19.44
TOTAL AREA(ACRES) = 2.4 PEAK FLOW RATE(CFS) = 20.27

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.43 HALFSTREET FLOOD WIDTH(FEET) = 15.21
FLOW VELOCITY(FEET/SEC.) = 4.17 DEPTH*VELOCITY(FT*FT/SEC.) = 1.79
LONGEST FLOWPATH FROM NODE 23.90 TO NODE 23.04 = 730.00 FEET.

FLOW PROCESS FROM NODE 23.04 TO NODE 23.04 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 5.02
RAINFALL INTENSITY(INCH/HR) = 9.19
TOTAL STREAM AREA(ACRES) = 2.45
PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.27

FLOW PROCESS FROM NODE 23.70 TO NODE 23.60 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
UPSTREAM ELEVATION(FEET) = 814.70
DOWNSTREAM ELEVATION(FEET) = 814.00
ELEVATION DIFFERENCE(FEET) = 0.70
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.968
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 59.71
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.41
TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 1.41

FLOW PROCESS FROM NODE 23.60 TO NODE 23.50 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 814.00  DOWNSTREAM ELEVATION(FEET) = 812.90
STREET LENGTH(FEET) = 355.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 39.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.01
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.36
HALFSTREET FLOOD WIDTH(FEET) = 11.65
AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.36
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.49
STREET FLOW TRAVEL TIME(MIN.) = 4.35  Tc(MIN.) = 7.32
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.213
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.79  SUBAREA RUNOFF(CFS) = 5.13
TOTAL AREA(ACRES) = 1.0  PEAK FLOW RATE(CFS) = 6.23
```

```
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.41  HALFSTREET FLOOD WIDTH(FEET) = 13.98
FLOW VELOCITY(FEET/SEC.) = 1.50  DEPTH*VELOCITY(FT*FT/SEC.) = 0.61
LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.50 = 440.00 FEET.
```

```
FLOW PROCESS FROM NODE 23.50 TO NODE 23.04 IS CODE = 31
```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 807.00  DOWNSTREAM(FEET) = 803.00
FLOW LENGTH(FEET) = 400.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.95
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.23
```

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PIPE TRAVEL TIME(MIN.) = 1.12 Tc(MIN.) = 8.44
 LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.04 = 840.00 FEET.

FLOW PROCESS FROM NODE 23.04 TO NODE 23.04 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.44
 RAINFALL INTENSITY(INCH/HR) = 6.58
 TOTAL STREAM AREA(ACRES) = 0.96
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.23

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.27	5.02	9.192	2.45
2	6.23	8.44	6.580	0.96

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	23.98	5.02	9.192
2	20.74	8.44	6.580

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 23.98 Tc(MIN.) = 5.02
 TOTAL AREA(ACRES) = 3.4
 LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.04 = 840.00 FEET.

FLOW PROCESS FROM NODE 23.04 TO NODE 23.03 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 803.00 DOWNSTREAM(FEET) = 800.00
 FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.88
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 23.98

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PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 5.11
LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.03 = 915.00 FEET.

FLOW PROCESS FROM NODE 23.03 TO NODE 23.02 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 800.00 DOWNSTREAM(FEET) = 799.50
CHANNEL LENGTH THRU SUBAREA(FEET) = 35.00 CHANNEL SLOPE = 0.0143
CHANNEL FLOW THRU SUBAREA(CFS) = 23.98
FLOW VELOCITY(FEET/SEC) = 3.76 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 5.27
LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.02 = 950.00 FEET.

FLOW PROCESS FROM NODE 23.03 TO NODE 23.02 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.914
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.8090
SUBAREA AREA(ACRES) = 0.61 SUBAREA RUNOFF(CFS) = 1.63
TOTAL AREA(ACRES) = 4.0 TOTAL RUNOFF(CFS) = 28.99
TC(MIN.) = 5.27

FLOW PROCESS FROM NODE 23.02 TO NODE 23.01 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 799.50 DOWNSTREAM(FEET) = 797.50
FLOW LENGTH(FEET) = 190.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 21.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.63
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 28.99
PIPE TRAVEL TIME(MIN.) = 0.37 Tc(MIN.) = 5.64
LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.01 = 1140.00 FEET.

FLOW PROCESS FROM NODE 23.01 TO NODE 23.01 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	28.99	5.64	8.536	4.02

LONGEST FLOWPATH FROM NODE 23.70 TO NODE 23.01 = 1140.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	50.21	12.87	5.013	24.05

LONGEST FLOWPATH FROM NODE 2304.00 TO NODE 23.01 = 1750.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	50.99	5.64	8.536
2	67.24	12.87	5.013

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 67.24 Tc(MIN.) = 12.87
 TOTAL AREA(ACRES) = 28.1

FLOW PROCESS FROM NODE 23.01 TO NODE 23.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 797.50 DOWNSTREAM(FEET) = 790.00
 FLOW LENGTH(FEET) = 35.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 32.95
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 67.24
 PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 12.88
 LONGEST FLOWPATH FROM NODE 2304.00 TO NODE 23.00 = 1785.00 FEET.

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 28.1 TC(MIN.) = 12.88
 PEAK FLOW RATE(CFS) = 67.24

END OF RATIONAL METHOD ANALYSIS



Subbasin 23
Node 23.02

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 12/9/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 5 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 4 ACRES
RUNOFF COEFFICIENT 0.9
PEAK DISCHARGE 29 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 5	DISCHARGE (CFS) = 0.8
TIME (MIN) = 10	DISCHARGE (CFS) = 0.8
TIME (MIN) = 15	DISCHARGE (CFS) = 0.8
TIME (MIN) = 20	DISCHARGE (CFS) = 0.8
TIME (MIN) = 25	DISCHARGE (CFS) = 0.8
TIME (MIN) = 30	DISCHARGE (CFS) = 0.8
TIME (MIN) = 35	DISCHARGE (CFS) = 0.8
TIME (MIN) = 40	DISCHARGE (CFS) = 0.8
TIME (MIN) = 45	DISCHARGE (CFS) = 0.8
TIME (MIN) = 50	DISCHARGE (CFS) = 0.9
TIME (MIN) = 55	DISCHARGE (CFS) = 0.9
TIME (MIN) = 60	DISCHARGE (CFS) = 0.9
TIME (MIN) = 65	DISCHARGE (CFS) = 0.9
TIME (MIN) = 70	DISCHARGE (CFS) = 0.9
TIME (MIN) = 75	DISCHARGE (CFS) = 0.9
TIME (MIN) = 80	DISCHARGE (CFS) = 1
TIME (MIN) = 85	DISCHARGE (CFS) = 1
TIME (MIN) = 90	DISCHARGE (CFS) = 1
TIME (MIN) = 95	DISCHARGE (CFS) = 1
TIME (MIN) = 100	DISCHARGE (CFS) = 1
TIME (MIN) = 105	DISCHARGE (CFS) = 1.1
TIME (MIN) = 110	DISCHARGE (CFS) = 1.1
TIME (MIN) = 115	DISCHARGE (CFS) = 1.1
TIME (MIN) = 120	DISCHARGE (CFS) = 1.1
TIME (MIN) = 125	DISCHARGE (CFS) = 1.2
TIME (MIN) = 130	DISCHARGE (CFS) = 1.2
TIME (MIN) = 135	DISCHARGE (CFS) = 1.2
TIME (MIN) = 140	DISCHARGE (CFS) = 1.3
TIME (MIN) = 145	DISCHARGE (CFS) = 1.3
TIME (MIN) = 150	DISCHARGE (CFS) = 1.4

TIME (MIN)	=	155	DISCHARGE (CFS)	=	1.4
TIME (MIN)	=	160	DISCHARGE (CFS)	=	1.5
TIME (MIN)	=	165	DISCHARGE (CFS)	=	1.5
TIME (MIN)	=	170	DISCHARGE (CFS)	=	1.6
TIME (MIN)	=	175	DISCHARGE (CFS)	=	1.7
TIME (MIN)	=	180	DISCHARGE (CFS)	=	1.7
TIME (MIN)	=	185	DISCHARGE (CFS)	=	1.9
TIME (MIN)	=	190	DISCHARGE (CFS)	=	1.9
TIME (MIN)	=	195	DISCHARGE (CFS)	=	2.1
TIME (MIN)	=	200	DISCHARGE (CFS)	=	2.2
TIME (MIN)	=	205	DISCHARGE (CFS)	=	2.4
TIME (MIN)	=	210	DISCHARGE (CFS)	=	2.6
TIME (MIN)	=	215	DISCHARGE (CFS)	=	3
TIME (MIN)	=	220	DISCHARGE (CFS)	=	3.2
TIME (MIN)	=	225	DISCHARGE (CFS)	=	3.9
TIME (MIN)	=	230	DISCHARGE (CFS)	=	4.5
TIME (MIN)	=	235	DISCHARGE (CFS)	=	6.6
TIME (MIN)	=	240	DISCHARGE (CFS)	=	13.5
TIME (MIN)	=	245	DISCHARGE (CFS)	=	29
TIME (MIN)	=	250	DISCHARGE (CFS)	=	5.3
TIME (MIN)	=	255	DISCHARGE (CFS)	=	3.5
TIME (MIN)	=	260	DISCHARGE (CFS)	=	2.8
TIME (MIN)	=	265	DISCHARGE (CFS)	=	2.3
TIME (MIN)	=	270	DISCHARGE (CFS)	=	2
TIME (MIN)	=	275	DISCHARGE (CFS)	=	1.8
TIME (MIN)	=	280	DISCHARGE (CFS)	=	1.6
TIME (MIN)	=	285	DISCHARGE (CFS)	=	1.5
TIME (MIN)	=	290	DISCHARGE (CFS)	=	1.4
TIME (MIN)	=	295	DISCHARGE (CFS)	=	1.3
TIME (MIN)	=	300	DISCHARGE (CFS)	=	1.2
TIME (MIN)	=	305	DISCHARGE (CFS)	=	1.2
TIME (MIN)	=	310	DISCHARGE (CFS)	=	1.1
TIME (MIN)	=	315	DISCHARGE (CFS)	=	1
TIME (MIN)	=	320	DISCHARGE (CFS)	=	1
TIME (MIN)	=	325	DISCHARGE (CFS)	=	1
TIME (MIN)	=	330	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	335	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	340	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	345	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	350	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	355	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	360	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	365	DISCHARGE (CFS)	=	0

Detention 23 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical tree structure of the project components:

- Detention 23
 - Basin Models
 - Basin 23
 - Basin Inflow** (selected)
 - Discharge Gage
 - Detention Basin 23
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Sierra
 - Control Specifications
 - Control 1
 - Time-Series Data
 - Discharge Gages
 - Node 23.02 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
 - Paired Data
 - Elevation-Storage Functions
 - Basin 23 Stage-Storage

The bottom pane shows the configuration for the selected **Basin Inflow** element. It includes tabs for **Source**, **Inflow**, and **Options**. The **Basin Name** is **Basin 23** and the **Element Name** is **Basin Inflow**. The configuration fields are:

Description:	Node 264	
Downstream:	Detention Basin 23	
Area (MI2)	0.0063	
Flow Method:	Discharge Gage	

Detention 23

Basin Models

Basin 23

Basin Inflow

Discharge Gage

Detention Basin 23

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 23.02 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 23 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 23

Element Name: Detention Basin 23

Method: Orifice Outlet

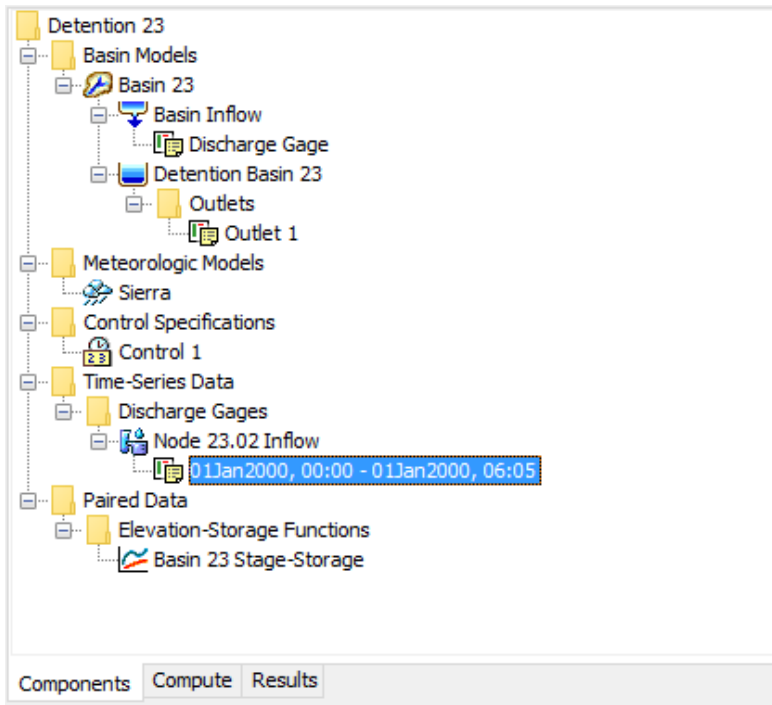
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.5

*Area (FT2) 0.785

*Coefficient: 0.6



Time-Series Gage		Time Window	Table	Graph
Time (ddMMYYYY, HH:mm)	Discharge (CFS)			
01Jan2000, 00:00	0.0			
01Jan2000, 00:05	0.8			
01Jan2000, 00:10	0.8			
01Jan2000, 00:15	0.8			
01Jan2000, 00:20	0.8			
01Jan2000, 00:25	0.8			
01Jan2000, 00:30	0.8			
01Jan2000, 00:35	0.8			
01Jan2000, 00:40	0.8			
01Jan2000, 00:45	0.8			
01Jan2000, 00:50	0.9			
01Jan2000, 00:55	0.9			
01Jan2000, 01:00	0.9			
01Jan2000, 01:05	0.9			
01Jan2000, 01:10	0.9			
01Jan2000, 01:15	0.9			
01Jan2000, 01:20	1.0			
01Jan2000, 01:25	1.0			
01Jan2000, 01:30	1.0			
01Jan2000, 01:35	1.0			
01Jan2000, 01:40	1.0			
01Jan2000, 01:45	1.1			
01Jan2000, 01:50	1.1			
01Jan2000, 01:55	1.1			
01Jan2000, 02:00	1.1			

Detention 23

Basin Models

Basin 23

Basin Inflow

Discharge Gage

Detention Basin 23

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 23.02 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 23 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	0.859

Project: Detention 23 Simulation Run: Run 1
Reservoir: Detention Basin 23

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 23
End of Run:	01Jan2000, 06:05	Meteorologic Model:	Sierra
Compute Time:	16Jan2017, 17:13:46	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	29.0 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	4.9 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:11
Inflow Volume:	1.0 (AC-FT)	Peak Storage:	0.5 (AC-FT)
Discharge Volume:	0.9 (AC-FT)	Peak Elevation:	2.2 (FT)

Project: Detention 23 Simulation Run: Run 1
Reservoir: Detention Basin 23

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 23
End of Run: 01Jan2000, 06:05 Meteorologic Model: Sierra
Compute Time: 16Jan2017, 17:13:46 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0
01Jan2000	00:02	0.3	0.0	0.0	0.0
01Jan2000	00:03	0.5	0.0	0.0	0.0
01Jan2000	00:04	0.6	0.0	0.0	0.0
01Jan2000	00:05	0.8	0.0	0.0	0.0
01Jan2000	00:06	0.8	0.0	0.0	0.0
01Jan2000	00:07	0.8	0.0	0.0	0.0
01Jan2000	00:08	0.8	0.0	0.0	0.0
01Jan2000	00:09	0.8	0.0	0.0	0.0
01Jan2000	00:10	0.8	0.0	0.0	0.0
01Jan2000	00:11	0.8	0.0	0.0	0.0
01Jan2000	00:12	0.8	0.0	0.0	0.0
01Jan2000	00:13	0.8	0.0	0.1	0.0
01Jan2000	00:14	0.8	0.0	0.1	0.0
01Jan2000	00:15	0.8	0.0	0.1	0.0
01Jan2000	00:16	0.8	0.0	0.1	0.0
01Jan2000	00:17	0.8	0.0	0.1	0.0
01Jan2000	00:18	0.8	0.0	0.1	0.0
01Jan2000	00:19	0.8	0.0	0.1	0.0
01Jan2000	00:20	0.8	0.0	0.1	0.0
01Jan2000	00:21	0.8	0.0	0.1	0.0
01Jan2000	00:22	0.8	0.0	0.1	0.0
01Jan2000	00:23	0.8	0.0	0.1	0.0
01Jan2000	00:24	0.8	0.0	0.1	0.0
01Jan2000	00:25	0.8	0.0	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	0.8	0.0	0.1	0.0
01Jan2000	00:27	0.8	0.0	0.1	0.0
01Jan2000	00:28	0.8	0.0	0.1	0.0
01Jan2000	00:29	0.8	0.0	0.1	0.0
01Jan2000	00:30	0.8	0.0	0.1	0.0
01Jan2000	00:31	0.8	0.0	0.1	0.0
01Jan2000	00:32	0.8	0.0	0.2	0.0
01Jan2000	00:33	0.8	0.0	0.2	0.0
01Jan2000	00:34	0.8	0.0	0.2	0.0
01Jan2000	00:35	0.8	0.0	0.2	0.0
01Jan2000	00:36	0.8	0.0	0.2	0.0
01Jan2000	00:37	0.8	0.0	0.2	0.0
01Jan2000	00:38	0.8	0.0	0.2	0.0
01Jan2000	00:39	0.8	0.0	0.2	0.0
01Jan2000	00:40	0.8	0.0	0.2	0.0
01Jan2000	00:41	0.8	0.0	0.2	0.0
01Jan2000	00:42	0.8	0.0	0.2	0.0
01Jan2000	00:43	0.8	0.0	0.2	0.0
01Jan2000	00:44	0.8	0.0	0.2	0.0
01Jan2000	00:45	0.8	0.0	0.2	0.0
01Jan2000	00:46	0.8	0.0	0.2	0.0
01Jan2000	00:47	0.8	0.0	0.2	0.0
01Jan2000	00:48	0.9	0.1	0.2	0.0
01Jan2000	00:49	0.9	0.1	0.2	0.0
01Jan2000	00:50	0.9	0.1	0.2	0.0
01Jan2000	00:51	0.9	0.1	0.3	0.0
01Jan2000	00:52	0.9	0.1	0.3	0.0
01Jan2000	00:53	0.9	0.1	0.3	0.0
01Jan2000	00:54	0.9	0.1	0.3	0.0
01Jan2000	00:55	0.9	0.1	0.3	0.0
01Jan2000	00:56	0.9	0.1	0.3	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	0.9	0.1	0.3	0.0
01Jan2000	00:58	0.9	0.1	0.3	0.0
01Jan2000	00:59	0.9	0.1	0.3	0.0
01Jan2000	01:00	0.9	0.1	0.3	0.0
01Jan2000	01:01	0.9	0.1	0.3	0.0
01Jan2000	01:02	0.9	0.1	0.3	0.0
01Jan2000	01:03	0.9	0.1	0.3	0.0
01Jan2000	01:04	0.9	0.1	0.3	0.0
01Jan2000	01:05	0.9	0.1	0.3	0.0
01Jan2000	01:06	0.9	0.1	0.3	0.0
01Jan2000	01:07	0.9	0.1	0.3	0.0
01Jan2000	01:08	0.9	0.1	0.3	0.0
01Jan2000	01:09	0.9	0.1	0.4	0.0
01Jan2000	01:10	0.9	0.1	0.4	0.0
01Jan2000	01:11	0.9	0.1	0.4	0.0
01Jan2000	01:12	0.9	0.1	0.4	0.0
01Jan2000	01:13	0.9	0.1	0.4	0.0
01Jan2000	01:14	0.9	0.1	0.4	0.0
01Jan2000	01:15	0.9	0.1	0.4	0.0
01Jan2000	01:16	0.9	0.1	0.4	0.0
01Jan2000	01:17	0.9	0.1	0.4	0.0
01Jan2000	01:18	1.0	0.1	0.4	0.0
01Jan2000	01:19	1.0	0.1	0.4	0.0
01Jan2000	01:20	1.0	0.1	0.4	0.0
01Jan2000	01:21	1.0	0.1	0.4	0.0
01Jan2000	01:22	1.0	0.1	0.4	0.0
01Jan2000	01:23	1.0	0.1	0.4	0.0
01Jan2000	01:24	1.0	0.1	0.4	0.0
01Jan2000	01:25	1.0	0.1	0.5	0.0
01Jan2000	01:26	1.0	0.1	0.5	0.0
01Jan2000	01:27	1.0	0.1	0.5	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	1.0	0.1	0.5	0.0
01Jan2000	01:29	1.0	0.1	0.5	0.0
01Jan2000	01:30	1.0	0.1	0.5	0.0
01Jan2000	01:31	1.0	0.1	0.5	0.0
01Jan2000	01:32	1.0	0.1	0.5	0.0
01Jan2000	01:33	1.0	0.1	0.5	0.2
01Jan2000	01:34	1.0	0.1	0.5	0.3
01Jan2000	01:35	1.0	0.1	0.5	0.4
01Jan2000	01:36	1.0	0.1	0.5	0.5
01Jan2000	01:37	1.0	0.1	0.5	0.5
01Jan2000	01:38	1.0	0.1	0.5	0.6
01Jan2000	01:39	1.0	0.1	0.5	0.6
01Jan2000	01:40	1.0	0.1	0.5	0.6
01Jan2000	01:41	1.0	0.1	0.5	0.6
01Jan2000	01:42	1.0	0.1	0.5	0.7
01Jan2000	01:43	1.1	0.1	0.5	0.7
01Jan2000	01:44	1.1	0.1	0.5	0.7
01Jan2000	01:45	1.1	0.1	0.5	0.7
01Jan2000	01:46	1.1	0.1	0.5	0.8
01Jan2000	01:47	1.1	0.1	0.5	0.8
01Jan2000	01:48	1.1	0.1	0.5	0.8
01Jan2000	01:49	1.1	0.1	0.5	0.8
01Jan2000	01:50	1.1	0.1	0.5	0.8
01Jan2000	01:51	1.1	0.1	0.6	0.8
01Jan2000	01:52	1.1	0.1	0.6	0.9
01Jan2000	01:53	1.1	0.1	0.6	0.9
01Jan2000	01:54	1.1	0.1	0.6	0.9
01Jan2000	01:55	1.1	0.1	0.6	0.9
01Jan2000	01:56	1.1	0.1	0.6	0.9
01Jan2000	01:57	1.1	0.1	0.6	0.9
01Jan2000	01:58	1.1	0.1	0.6	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	1.1	0.1	0.6	0.9
01Jan2000	02:00	1.1	0.1	0.6	0.9
01Jan2000	02:01	1.1	0.1	0.6	0.9
01Jan2000	02:02	1.1	0.1	0.6	1.0
01Jan2000	02:03	1.2	0.1	0.6	1.0
01Jan2000	02:04	1.2	0.1	0.6	1.0
01Jan2000	02:05	1.2	0.1	0.6	1.0
01Jan2000	02:06	1.2	0.1	0.6	1.0
01Jan2000	02:07	1.2	0.1	0.6	1.0
01Jan2000	02:08	1.2	0.1	0.6	1.0
01Jan2000	02:09	1.2	0.1	0.6	1.0
01Jan2000	02:10	1.2	0.1	0.6	1.0
01Jan2000	02:11	1.2	0.1	0.6	1.0
01Jan2000	02:12	1.2	0.1	0.6	1.0
01Jan2000	02:13	1.2	0.1	0.6	1.0
01Jan2000	02:14	1.2	0.1	0.6	1.1
01Jan2000	02:15	1.2	0.1	0.6	1.1
01Jan2000	02:16	1.2	0.1	0.6	1.1
01Jan2000	02:17	1.2	0.1	0.6	1.1
01Jan2000	02:18	1.3	0.1	0.6	1.1
01Jan2000	02:19	1.3	0.1	0.6	1.1
01Jan2000	02:20	1.3	0.1	0.6	1.1
01Jan2000	02:21	1.3	0.1	0.6	1.1
01Jan2000	02:22	1.3	0.1	0.6	1.1
01Jan2000	02:23	1.3	0.1	0.6	1.1
01Jan2000	02:24	1.3	0.1	0.6	1.1
01Jan2000	02:25	1.3	0.1	0.6	1.1
01Jan2000	02:26	1.3	0.1	0.6	1.1
01Jan2000	02:27	1.3	0.1	0.6	1.1
01Jan2000	02:28	1.4	0.1	0.6	1.2
01Jan2000	02:29	1.4	0.1	0.6	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	1.4	0.1	0.6	1.2
01Jan2000	02:31	1.4	0.1	0.6	1.2
01Jan2000	02:32	1.4	0.1	0.6	1.2
01Jan2000	02:33	1.4	0.1	0.6	1.2
01Jan2000	02:34	1.4	0.1	0.6	1.2
01Jan2000	02:35	1.4	0.1	0.6	1.2
01Jan2000	02:36	1.4	0.1	0.6	1.2
01Jan2000	02:37	1.4	0.1	0.6	1.2
01Jan2000	02:38	1.5	0.1	0.6	1.2
01Jan2000	02:39	1.5	0.1	0.6	1.2
01Jan2000	02:40	1.5	0.1	0.6	1.3
01Jan2000	02:41	1.5	0.1	0.6	1.3
01Jan2000	02:42	1.5	0.1	0.6	1.3
01Jan2000	02:43	1.5	0.1	0.6	1.3
01Jan2000	02:44	1.5	0.1	0.6	1.3
01Jan2000	02:45	1.5	0.1	0.6	1.3
01Jan2000	02:46	1.5	0.1	0.6	1.3
01Jan2000	02:47	1.5	0.1	0.6	1.3
01Jan2000	02:48	1.6	0.1	0.6	1.3
01Jan2000	02:49	1.6	0.1	0.6	1.3
01Jan2000	02:50	1.6	0.1	0.6	1.3
01Jan2000	02:51	1.6	0.1	0.6	1.3
01Jan2000	02:52	1.6	0.1	0.6	1.4
01Jan2000	02:53	1.7	0.1	0.6	1.4
01Jan2000	02:54	1.7	0.1	0.6	1.4
01Jan2000	02:55	1.7	0.1	0.6	1.4
01Jan2000	02:56	1.7	0.1	0.6	1.4
01Jan2000	02:57	1.7	0.1	0.6	1.4
01Jan2000	02:58	1.7	0.1	0.6	1.4
01Jan2000	02:59	1.7	0.1	0.6	1.4
01Jan2000	03:00	1.7	0.1	0.6	1.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	1.7	0.1	0.6	1.4
01Jan2000	03:02	1.8	0.1	0.6	1.5
01Jan2000	03:03	1.8	0.1	0.6	1.5
01Jan2000	03:04	1.9	0.1	0.7	1.5
01Jan2000	03:05	1.9	0.1	0.7	1.5
01Jan2000	03:06	1.9	0.1	0.7	1.5
01Jan2000	03:07	1.9	0.1	0.7	1.5
01Jan2000	03:08	1.9	0.1	0.7	1.5
01Jan2000	03:09	1.9	0.1	0.7	1.5
01Jan2000	03:10	1.9	0.1	0.7	1.5
01Jan2000	03:11	1.9	0.1	0.7	1.6
01Jan2000	03:12	2.0	0.1	0.7	1.6
01Jan2000	03:13	2.0	0.1	0.7	1.6
01Jan2000	03:14	2.1	0.1	0.7	1.6
01Jan2000	03:15	2.1	0.1	0.7	1.6
01Jan2000	03:16	2.1	0.1	0.7	1.6
01Jan2000	03:17	2.1	0.1	0.7	1.6
01Jan2000	03:18	2.2	0.1	0.7	1.6
01Jan2000	03:19	2.2	0.1	0.7	1.7
01Jan2000	03:20	2.2	0.1	0.7	1.7
01Jan2000	03:21	2.2	0.2	0.7	1.7
01Jan2000	03:22	2.3	0.2	0.7	1.7
01Jan2000	03:23	2.3	0.2	0.7	1.7
01Jan2000	03:24	2.4	0.2	0.7	1.7
01Jan2000	03:25	2.4	0.2	0.7	1.8
01Jan2000	03:26	2.4	0.2	0.7	1.8
01Jan2000	03:27	2.5	0.2	0.7	1.8
01Jan2000	03:28	2.5	0.2	0.7	1.8
01Jan2000	03:29	2.6	0.2	0.7	1.8
01Jan2000	03:30	2.6	0.2	0.7	1.8
01Jan2000	03:31	2.7	0.2	0.7	1.9

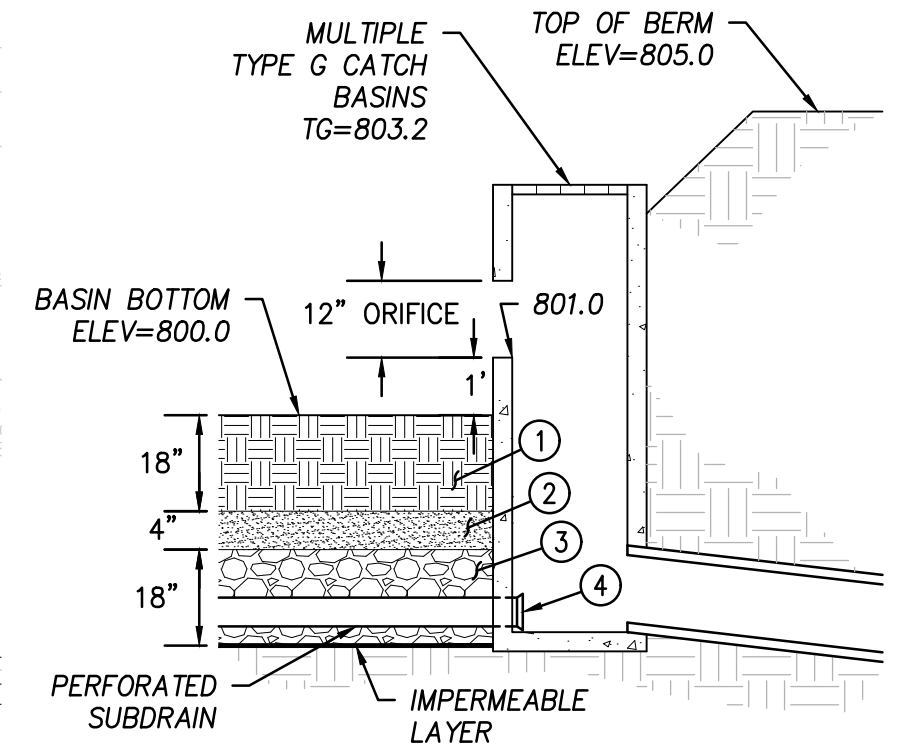
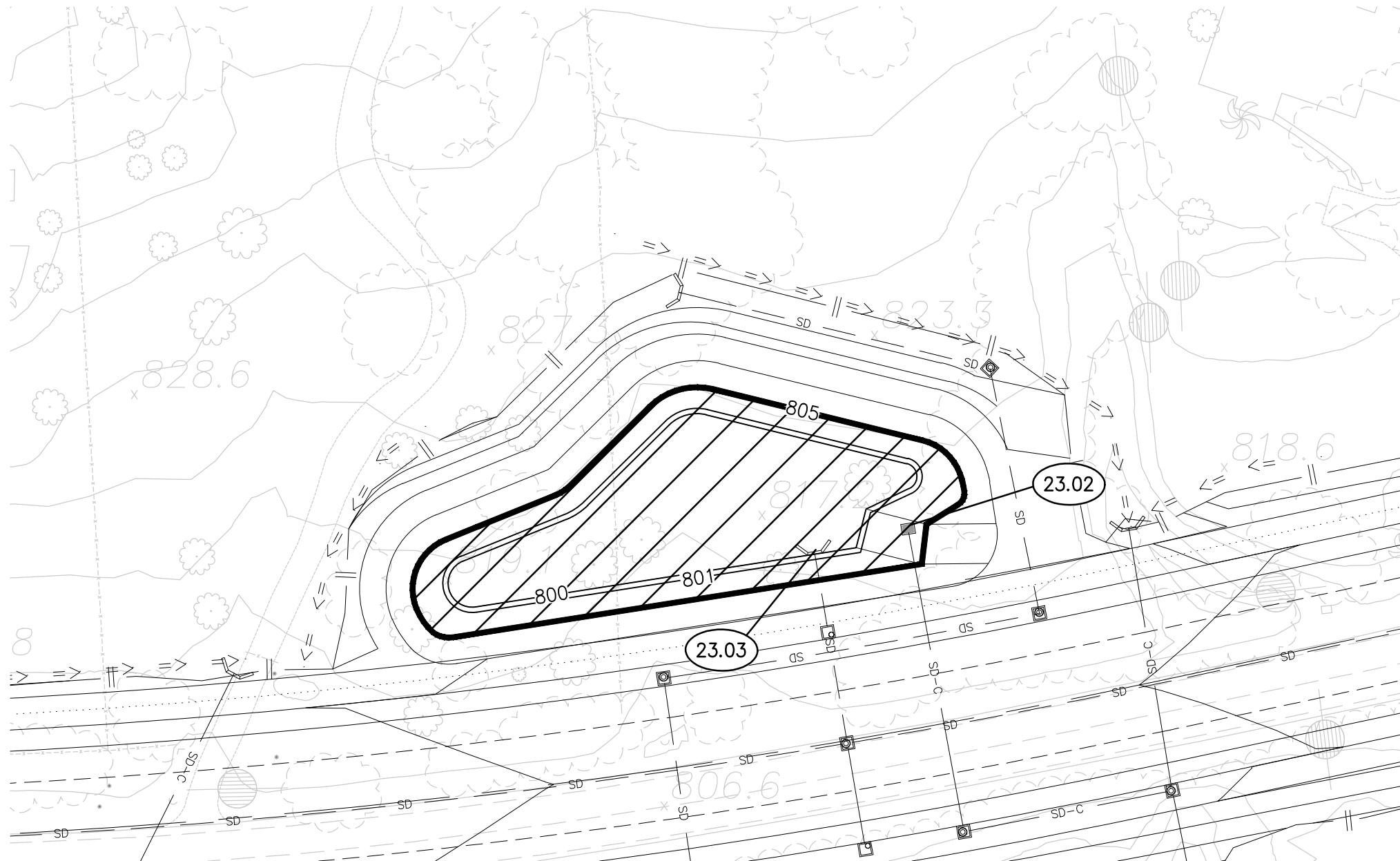
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	2.8	0.2	0.7	1.9
01Jan2000	03:33	2.8	0.2	0.8	1.9
01Jan2000	03:34	2.9	0.2	0.8	1.9
01Jan2000	03:35	3.0	0.2	0.8	2.0
01Jan2000	03:36	3.0	0.2	0.8	2.0
01Jan2000	03:37	3.1	0.2	0.8	2.0
01Jan2000	03:38	3.1	0.2	0.8	2.0
01Jan2000	03:39	3.2	0.2	0.8	2.1
01Jan2000	03:40	3.2	0.2	0.8	2.1
01Jan2000	03:41	3.3	0.2	0.8	2.1
01Jan2000	03:42	3.5	0.2	0.8	2.1
01Jan2000	03:43	3.6	0.2	0.8	2.2
01Jan2000	03:44	3.8	0.2	0.8	2.2
01Jan2000	03:45	3.9	0.2	0.8	2.2
01Jan2000	03:46	4.0	0.2	0.9	2.3
01Jan2000	03:47	4.1	0.2	0.9	2.3
01Jan2000	03:48	4.3	0.2	0.9	2.3
01Jan2000	03:49	4.4	0.2	0.9	2.4
01Jan2000	03:50	4.5	0.2	0.9	2.4
01Jan2000	03:51	4.9	0.2	0.9	2.5
01Jan2000	03:52	5.3	0.2	0.9	2.5
01Jan2000	03:53	5.8	0.2	1.0	2.6
01Jan2000	03:54	6.2	0.2	1.0	2.6
01Jan2000	03:55	6.6	0.2	1.0	2.7
01Jan2000	03:56	8.0	0.2	1.0	2.8
01Jan2000	03:57	9.4	0.2	1.1	2.9
01Jan2000	03:58	10.7	0.2	1.1	3.0
01Jan2000	03:59	12.1	0.3	1.2	3.1
01Jan2000	04:00	13.5	0.3	1.2	3.2
01Jan2000	04:01	16.6	0.3	1.3	3.4
01Jan2000	04:02	19.7	0.3	1.4	3.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	22.8	0.3	1.5	3.8
01Jan2000	04:04	25.9	0.4	1.6	4.0
01Jan2000	04:05	29.0	0.4	1.8	4.3
01Jan2000	04:06	24.3	0.4	1.9	4.5
01Jan2000	04:07	19.5	0.4	2.0	4.7
01Jan2000	04:08	14.8	0.5	2.1	4.8
01Jan2000	04:09	10.0	0.5	2.2	4.9
01Jan2000	04:10	5.3	0.5	2.2	4.9
01Jan2000	04:11	4.9	0.5	2.2	4.9
01Jan2000	04:12	4.6	0.5	2.2	4.9
01Jan2000	04:13	4.2	0.5	2.2	4.9
01Jan2000	04:14	3.9	0.5	2.2	4.9
01Jan2000	04:15	3.5	0.5	2.2	4.9
01Jan2000	04:16	3.4	0.5	2.2	4.9
01Jan2000	04:17	3.2	0.5	2.2	4.9
01Jan2000	04:18	3.1	0.5	2.1	4.8
01Jan2000	04:19	2.9	0.5	2.1	4.8
01Jan2000	04:20	2.8	0.5	2.1	4.8
01Jan2000	04:21	2.7	0.5	2.1	4.8
01Jan2000	04:22	2.6	0.5	2.1	4.8
01Jan2000	04:23	2.5	0.4	2.1	4.8
01Jan2000	04:24	2.4	0.4	2.1	4.7
01Jan2000	04:25	2.3	0.4	2.1	4.7
01Jan2000	04:26	2.2	0.4	2.0	4.7
01Jan2000	04:27	2.2	0.4	2.0	4.7
01Jan2000	04:28	2.1	0.4	2.0	4.6
01Jan2000	04:29	2.1	0.4	2.0	4.6
01Jan2000	04:30	2.0	0.4	2.0	4.6
01Jan2000	04:31	2.0	0.4	2.0	4.6
01Jan2000	04:32	1.9	0.4	1.9	4.5
01Jan2000	04:33	1.9	0.4	1.9	4.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	1.8	0.4	1.9	4.5
01Jan2000	04:35	1.8	0.4	1.9	4.5
01Jan2000	04:36	1.8	0.4	1.9	4.4
01Jan2000	04:37	1.7	0.4	1.9	4.4
01Jan2000	04:38	1.7	0.4	1.8	4.4
01Jan2000	04:39	1.6	0.4	1.8	4.3
01Jan2000	04:40	1.6	0.4	1.8	4.3
01Jan2000	04:41	1.6	0.4	1.8	4.3
01Jan2000	04:42	1.6	0.4	1.8	4.3
01Jan2000	04:43	1.5	0.4	1.7	4.2
01Jan2000	04:44	1.5	0.4	1.7	4.2
01Jan2000	04:45	1.5	0.4	1.7	4.2
01Jan2000	04:46	1.5	0.4	1.7	4.1
01Jan2000	04:47	1.5	0.4	1.7	4.1
01Jan2000	04:48	1.4	0.4	1.7	4.1
01Jan2000	04:49	1.4	0.4	1.6	4.0
01Jan2000	04:50	1.4	0.4	1.6	4.0
01Jan2000	04:51	1.4	0.3	1.6	4.0
01Jan2000	04:52	1.4	0.3	1.6	4.0
01Jan2000	04:53	1.3	0.3	1.6	3.9
01Jan2000	04:54	1.3	0.3	1.6	3.9
01Jan2000	04:55	1.3	0.3	1.5	3.9
01Jan2000	04:56	1.3	0.3	1.5	3.8
01Jan2000	04:57	1.3	0.3	1.5	3.8
01Jan2000	04:58	1.2	0.3	1.5	3.8
01Jan2000	04:59	1.2	0.3	1.5	3.7
01Jan2000	05:00	1.2	0.3	1.5	3.7
01Jan2000	05:01	1.2	0.3	1.5	3.7
01Jan2000	05:02	1.2	0.3	1.4	3.7
01Jan2000	05:03	1.2	0.3	1.4	3.6
01Jan2000	05:04	1.2	0.3	1.4	3.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	1.2	0.3	1.4	3.6
01Jan2000	05:06	1.2	0.3	1.4	3.5
01Jan2000	05:07	1.2	0.3	1.4	3.5
01Jan2000	05:08	1.1	0.3	1.3	3.5
01Jan2000	05:09	1.1	0.3	1.3	3.4
01Jan2000	05:10	1.1	0.3	1.3	3.4
01Jan2000	05:11	1.1	0.3	1.3	3.4
01Jan2000	05:12	1.1	0.3	1.3	3.3
01Jan2000	05:13	1.0	0.3	1.3	3.3
01Jan2000	05:14	1.0	0.3	1.3	3.3
01Jan2000	05:15	1.0	0.3	1.2	3.3
01Jan2000	05:16	1.0	0.3	1.2	3.2
01Jan2000	05:17	1.0	0.3	1.2	3.2
01Jan2000	05:18	1.0	0.3	1.2	3.2
01Jan2000	05:19	1.0	0.3	1.2	3.1
01Jan2000	05:20	1.0	0.3	1.2	3.1
01Jan2000	05:21	1.0	0.2	1.2	3.1
01Jan2000	05:22	1.0	0.2	1.1	3.0
01Jan2000	05:23	1.0	0.2	1.1	3.0
01Jan2000	05:24	1.0	0.2	1.1	3.0
01Jan2000	05:25	1.0	0.2	1.1	2.9
01Jan2000	05:26	1.0	0.2	1.1	2.9
01Jan2000	05:27	1.0	0.2	1.1	2.9
01Jan2000	05:28	0.9	0.2	1.1	2.8
01Jan2000	05:29	0.9	0.2	1.1	2.8
01Jan2000	05:30	0.9	0.2	1.0	2.8
01Jan2000	05:31	0.9	0.2	1.0	2.8
01Jan2000	05:32	0.9	0.2	1.0	2.7
01Jan2000	05:33	0.9	0.2	1.0	2.7
01Jan2000	05:34	0.9	0.2	1.0	2.7
01Jan2000	05:35	0.9	0.2	1.0	2.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	0.9	0.2	1.0	2.6
01Jan2000	05:37	0.9	0.2	1.0	2.6
01Jan2000	05:38	0.9	0.2	1.0	2.5
01Jan2000	05:39	0.9	0.2	0.9	2.5
01Jan2000	05:40	0.9	0.2	0.9	2.5
01Jan2000	05:41	0.9	0.2	0.9	2.5
01Jan2000	05:42	0.9	0.2	0.9	2.4
01Jan2000	05:43	0.8	0.2	0.9	2.4
01Jan2000	05:44	0.8	0.2	0.9	2.4
01Jan2000	05:45	0.8	0.2	0.9	2.3
01Jan2000	05:46	0.8	0.2	0.9	2.3
01Jan2000	05:47	0.8	0.2	0.9	2.3
01Jan2000	05:48	0.8	0.2	0.9	2.2
01Jan2000	05:49	0.8	0.2	0.8	2.2
01Jan2000	05:50	0.8	0.2	0.8	2.2
01Jan2000	05:51	0.8	0.2	0.8	2.2
01Jan2000	05:52	0.8	0.2	0.8	2.1
01Jan2000	05:53	0.8	0.2	0.8	2.1
01Jan2000	05:54	0.8	0.2	0.8	2.1
01Jan2000	05:55	0.8	0.2	0.8	2.0
01Jan2000	05:56	0.8	0.2	0.8	2.0
01Jan2000	05:57	0.8	0.2	0.8	2.0
01Jan2000	05:58	0.8	0.2	0.8	2.0
01Jan2000	05:59	0.8	0.2	0.8	1.9
01Jan2000	06:00	0.8	0.2	0.8	1.9
01Jan2000	06:01	0.6	0.2	0.7	1.9
01Jan2000	06:02	0.5	0.2	0.7	1.9
01Jan2000	06:03	0.3	0.2	0.7	1.8
01Jan2000	06:04	0.2	0.2	0.7	1.8
01Jan2000	06:05	0.0	0.2	0.7	1.7



CONSTRUCTION NOTES:

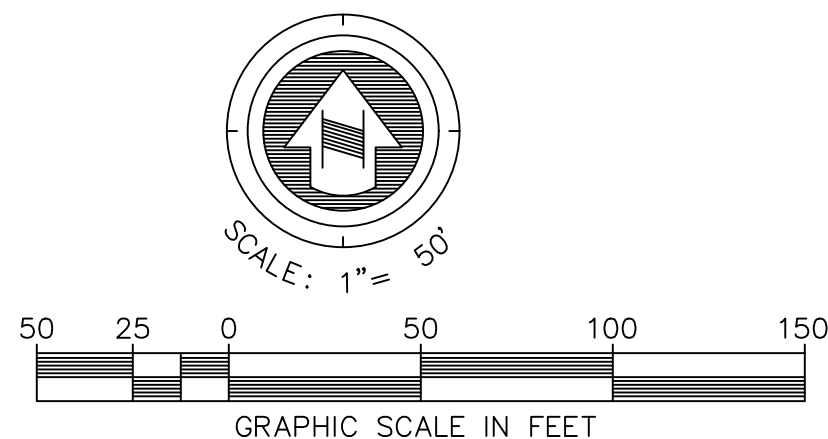
- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE

NOT TO SCALE

BASIN B - PROPOSED DETENTION 23 (BMP D3)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
801	0	7270	0.17	0.000
805	4	11431	0.26	0.859

NEWLAND SIERRA **BASIN B - PROPOSED DETENTION BASINS** **DETENTION 23 (BMP D3)**



APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 24

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
258	257	2	814.7	814	70	0.9	0.17				
257	256	6	814	808.4	175	0.9	0.36				
256	253	3	802	798	400						
253	253	1						1 OF 2			
255	254	2	809.9	807.7	80	0.9	0.13				
254	253	6	807.7	804.1	360	0.9	1.40	2 SIDES			
253	253	1						2 OF 2			
253	252	3	798	795.5	70						
252	251	5	795.5	795	50						
252	251	8				0.3	0.90				
251	245	3	795	793	180						
245	245	1						1 OF 3			
2403	2402	2	1360	1310	95	0.46	0.33				
2402	2401	5	1310	1130	305						
2402	2401	8				0.46	1.82				
2401	2400	5	1130	805	1315						
2401	2400	8				0.44	29.06				
2400	245	3	805	793	55						
245	245	1						2 OF 3			
250	249	2	812.2	812	80	0.9	0.09				
249	248	6	812	808.2	230	0.9	0.23				
248	247	3	802	800	100						
247	246	5	800	799	85						
247	246	8				0.3	0.41				
246	245	3	799	793	125						
245	245	1						3 OF 3			
							34.90				

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY *
* NO DETENTION *
* SUB-BASIN 24 *

FILE NAME: P-24.DAT

TIME/DATE OF STUDY: 13:29 11/17/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	39.0	20.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.50 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 258.00 TO NODE 257.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00

UPSTREAM ELEVATION(FEET) = 814.70

DOWNSTREAM ELEVATION(FEET) = 814.00

ELEVATION DIFFERENCE(FEET) = 0.70

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.902

WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN

THE MAXIMUM OVERLAND FLOW LENGTH = 65.00

(Reference: Table 3-1B of Hydrology Manual)

THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.41

TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 1.41

FLOW PROCESS FROM NODE 257.00 TO NODE 256.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 814.00 DOWNSTREAM ELEVATION(FEET) = 808.40

STREET LENGTH(FEET) = 175.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.90

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.24

HALFSTREET FLOOD WIDTH(FEET) = 5.84

AVERAGE FLOW VELOCITY(FT/SEC.) = 3.16

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.77

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STREET FLOW TRAVEL TIME(MIN.) = 0.92 Tc(MIN.) = 3.82

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 0.36 SUBAREA RUNOFF(CFS) = 2.99

TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 4.40

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.21

FLOW VELOCITY(FEET/SEC.) = 3.45 DEPTH*VELOCITY(FT*FT/SEC.) = 0.93

LONGEST FLOWPATH FROM NODE 258.00 TO NODE 256.00 = 245.00 FEET.

FLOW PROCESS FROM NODE 256.00 TO NODE 253.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 802.00 DOWNSTREAM(FEET) = 798.00

FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.4 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 5.46

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 4.40

PIPE TRAVEL TIME(MIN.) = 1.22 Tc(MIN.) = 5.05

LONGEST FLOWPATH FROM NODE 258.00 TO NODE 253.00 = 645.00 FEET.

FLOW PROCESS FROM NODE 253.00 TO NODE 253.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 5.05

RAINFALL INTENSITY(INCH/HR) = 9.17

TOTAL STREAM AREA(ACRES) = 0.53

PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.40

FLOW PROCESS FROM NODE 255.00 TO NODE 254.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 809.90

DOWNSTREAM ELEVATION(FEET) = 807.70

ELEVATION DIFFERENCE(FEET) = 2.20

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.298

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.08

TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 1.08

FLOW PROCESS FROM NODE 254.00 TO NODE 253.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 807.70 DOWNSTREAM ELEVATION(FEET) = 804.10

STREET LENGTH(FEET) = 360.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.89

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.36

HALFSTREET FLOOD WIDTH(FEET) = 11.45

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.41

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86

STREET FLOW TRAVEL TIME(MIN.) = 2.49 Tc(MIN.) = 4.79

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 1.40 SUBAREA RUNOFF(CFS) = 11.62

TOTAL AREA(ACRES) = 1.5 PEAK FLOW RATE(CFS) = 12.70

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.42 HALFSTREET FLOOD WIDTH(Feet) = 14.66

FLOW VELOCITY(Feet/Sec.) = 2.80 DEPTH*VELOCITY(FT*FT/SEC.) = 1.17

LONGEST FLOWPATH FROM NODE 255.00 TO NODE 253.00 = 440.00 FEET.

FLOW PROCESS FROM NODE 253.00 TO NODE 253.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 4.79

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 1.53

PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.70

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.40	5.05	9.167	0.53
2	12.70	4.79	9.222	1.53

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	16.87	4.79	9.222
2	17.02	5.05	9.167

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 17.02 T_c(MIN.) = 5.05

TOTAL AREA(ACRES) = 2.1

LONGEST FLOWPATH FROM NODE 258.00 TO NODE 253.00 = 645.00 FEET.

FLOW PROCESS FROM NODE 253.00 TO NODE 252.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 798.00 DOWNSTREAM(Feet) = 795.50

FLOW LENGTH(Feet) = 70.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.4 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 12.07

P-24

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 17.02
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 5.14
LONGEST FLOWPATH FROM NODE 258.00 TO NODE 252.00 = 715.00 FEET.

FLOW PROCESS FROM NODE 252.00 TO NODE 251.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 795.50 DOWNSTREAM(FEET) = 795.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 50.00 CHANNEL SLOPE = 0.0100
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0100 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 17.02
FLOW VELOCITY(FEET/SEC) = 1.44 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.58 Tc(MIN.) = 5.72
LONGEST FLOWPATH FROM NODE 258.00 TO NODE 251.00 = 765.00 FEET.

FLOW PROCESS FROM NODE 252.00 TO NODE 251.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.454
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.7176
SUBAREA AREA(ACRES) = 0.90 SUBAREA RUNOFF(CFS) = 2.28
TOTAL AREA(ACRES) = 3.0 TOTAL RUNOFF(CFS) = 17.96
TC(MIN.) = 5.72

FLOW PROCESS FROM NODE 251.00 TO NODE 245.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 795.00 DOWNSTREAM(FEET) = 793.00
FLOW LENGTH(FEET) = 180.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.99
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 17.96
PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 6.10
LONGEST FLOWPATH FROM NODE 258.00 TO NODE 245.00 = 945.00 FEET.

```
*****
FLOW PROCESS FROM NODE    245.00 TO NODE    245.00 IS CODE =    1
-----
```

```
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) =    6.10
RAINFALL INTENSITY(INCH/HR) =    8.11
TOTAL STREAM AREA(ACRES) =    2.96
PEAK FLOW RATE(CFS) AT CONFLUENCE =    17.96
```

```
*****
FLOW PROCESS FROM NODE    2403.00 TO NODE    2402.00 IS CODE =    21
-----
```

```
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4600
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =    95.00
UPSTREAM ELEVATION(FEET) =    1360.00
DOWNSTREAM ELEVATION(FEET) =    1310.00
ELEVATION DIFFERENCE(FEET) =    50.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.212
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.978
SUBAREA RUNOFF(CFS) =    1.36
TOTAL AREA(ACRES) =    0.33  TOTAL RUNOFF(CFS) =    1.36
```

```
*****
FLOW PROCESS FROM NODE    2402.00 TO NODE    2401.00 IS CODE =    53
-----
```

```
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) =    1310.00  DOWNSTREAM(FEET) =    1130.00
CHANNEL LENGTH THRU SUBAREA(FEET) =    305.00  CHANNEL SLOPE =    0.5902
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2295 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) =    1.36
FLOW VELOCITY(FEET/SEC) =    2.97 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) =    1.71  Tc(MIN.) =    6.92
LONGEST FLOWPATH FROM NODE    2403.00 TO NODE    2401.00 =    400.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE    2402.00 TO NODE    2401.00 IS CODE =    81
```

 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.477
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4600
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.4600
 SUBAREA AREA(ACRES) = 1.82 SUBAREA RUNOFF(CFS) = 6.26
 TOTAL AREA(ACRES) = 2.2 TOTAL RUNOFF(CFS) = 7.39
 TC(MIN.) = 6.92

FLOW PROCESS FROM NODE 2401.00 TO NODE 2400.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 1130.00 DOWNSTREAM(Feet) = 805.00
 CHANNEL LENGTH THRU SUBAREA(Feet) = 1315.00 CHANNEL SLOPE = 0.2471
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1790 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 7.39
 FLOW VELOCITY(Feet/Sec) = 4.61 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(Min.) = 4.75 Tc(Min.) = 11.67
 LONGEST FLOWPATH FROM NODE 2403.00 TO NODE 2400.00 = 1715.00 FEET.

FLOW PROCESS FROM NODE 2401.00 TO NODE 2400.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.337
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4400
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.4414
 SUBAREA AREA(ACRES) = 29.06 SUBAREA RUNOFF(CFS) = 68.25
 TOTAL AREA(ACRES) = 31.2 TOTAL RUNOFF(CFS) = 73.53
 TC(Min.) = 11.67

FLOW PROCESS FROM NODE 2400.00 TO NODE 245.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 805.00 DOWNSTREAM(Feet) = 793.00

P-24

FLOW LENGTH(FEET) = 55.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 34.86
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 73.53
PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 11.70
LONGEST FLOWPATH FROM NODE 2403.00 TO NODE 245.00 = 1770.00 FEET.

FLOW PROCESS FROM NODE 245.00 TO NODE 245.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.70
RAINFALL INTENSITY(INCH/HR) = 5.33
TOTAL STREAM AREA(ACRES) = 31.21
PEAK FLOW RATE(CFS) AT CONFLUENCE = 73.53

FLOW PROCESS FROM NODE 250.00 TO NODE 249.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 812.20
DOWNSTREAM ELEVATION(FEET) = 812.00
ELEVATION DIFFERENCE(FEET) = 0.20
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 3.207
WARNING: INITIAL SUBAREA FLOW PATH LENGTH IS GREATER THAN
THE MAXIMUM OVERLAND FLOW LENGTH = 50.00
(Reference: Table 3-1B of Hydrology Manual)
THE MAXIMUM OVERLAND FLOW LENGTH IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.75
TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.75

FLOW PROCESS FROM NODE 249.00 TO NODE 248.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

P-24

UPSTREAM ELEVATION(FEET) = 812.00 DOWNSTREAM ELEVATION(FEET) = 808.20
STREET LENGTH(FEET) = 230.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 39.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.70
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.48
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.51
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.69
STREET FLOW TRAVEL TIME(MIN.) = 1.53 Tc(MIN.) = 4.73
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.23 SUBAREA RUNOFF(CFS) = 1.91
TOTAL AREA(ACRES) = 0.3 PEAK FLOW RATE(CFS) = 2.66

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.19
FLOW VELOCITY(FEET/SEC.) = 2.76 DEPTH*VELOCITY(FT*FT/SEC.) = 0.86
LONGEST FLOWPATH FROM NODE 250.00 TO NODE 248.00 = 310.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 247.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 802.00 DOWNSTREAM(FEET) = 800.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.12
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.66
PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 5.01

LONGEST FLOWPATH FROM NODE 250.00 TO NODE 247.00 = 410.00 FEET.

FLOW PROCESS FROM NODE 247.00 TO NODE 246.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	800.00	DOWNSTREAM(FEET) =	799.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	85.00	CHANNEL SLOPE =	0.0118
CHANNEL FLOW THRU SUBAREA(CFS) =	2.66		
FLOW VELOCITY(FEET/SEC) =	1.98	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
TRAVEL TIME(MIN.) =	0.71	Tc(MIN.) =	5.72
LONGEST FLOWPATH FROM NODE 250.00 TO NODE 246.00 =	495.00	FEET.	

FLOW PROCESS FROM NODE 247.00 TO NODE 246.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	8.454		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.3000		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.5630		
SUBAREA AREA(ACRES) =	0.41	SUBAREA RUNOFF(CFS) =	1.04
TOTAL AREA(ACRES) =	0.7	TOTAL RUNOFF(CFS) =	3.47
TC(MIN.) =	5.72		

FLOW PROCESS FROM NODE 246.00 TO NODE 245.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	799.00	DOWNSTREAM(FEET) =	793.00
FLOW LENGTH(FEET) =	125.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO	18.000		
DEPTH OF FLOW IN 18.0 INCH PIPE IS	4.9 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	9.03		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	3.47		
PIPE TRAVEL TIME(MIN.) =	0.23	Tc(MIN.) =	5.95
LONGEST FLOWPATH FROM NODE 250.00 TO NODE 245.00 =	620.00	FEET.	

FLOW PROCESS FROM NODE 245.00 TO NODE 245.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
TIME OF CONCENTRATION(MIN.) = 5.95
RAINFALL INTENSITY(INCH/HR) = 8.24
TOTAL STREAM AREA(ACRES) = 0.73
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.47
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	17.96	6.10	8.114	2.96
2	73.53	11.70	5.330	31.21
3	3.47	5.95	8.241	0.73

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	58.56	5.95	8.241
2	59.70	6.10	8.114
3	87.57	11.70	5.330

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 87.57 Tc(MIN.) = 11.70
 TOTAL AREA(ACRES) = 34.9
 LONGEST FLOWPATH FROM NODE 2403.00 TO NODE 245.00 = 1770.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 34.9 TC(MIN.) = 11.70
 PEAK FLOW RATE(CFS) = 87.57

=====

END OF RATIONAL METHOD ANALYSIS



Subbasin 24
Node 251

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 12/9/2016
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 6 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 3 ACRES
RUNOFF COEFFICIENT 0.9
PEAK DISCHARGE 18 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 6	DISCHARGE (CFS) = 0.6
TIME (MIN) = 12	DISCHARGE (CFS) = 0.6
TIME (MIN) = 18	DISCHARGE (CFS) = 0.6
TIME (MIN) = 24	DISCHARGE (CFS) = 0.6
TIME (MIN) = 30	DISCHARGE (CFS) = 0.6
TIME (MIN) = 36	DISCHARGE (CFS) = 0.6
TIME (MIN) = 42	DISCHARGE (CFS) = 0.6
TIME (MIN) = 48	DISCHARGE (CFS) = 0.6
TIME (MIN) = 54	DISCHARGE (CFS) = 0.7
TIME (MIN) = 60	DISCHARGE (CFS) = 0.7
TIME (MIN) = 66	DISCHARGE (CFS) = 0.7
TIME (MIN) = 72	DISCHARGE (CFS) = 0.7
TIME (MIN) = 78	DISCHARGE (CFS) = 0.7
TIME (MIN) = 84	DISCHARGE (CFS) = 0.7
TIME (MIN) = 90	DISCHARGE (CFS) = 0.7
TIME (MIN) = 96	DISCHARGE (CFS) = 0.8
TIME (MIN) = 102	DISCHARGE (CFS) = 0.8
TIME (MIN) = 108	DISCHARGE (CFS) = 0.8
TIME (MIN) = 114	DISCHARGE (CFS) = 0.8
TIME (MIN) = 120	DISCHARGE (CFS) = 0.8
TIME (MIN) = 126	DISCHARGE (CFS) = 0.9
TIME (MIN) = 132	DISCHARGE (CFS) = 0.9
TIME (MIN) = 138	DISCHARGE (CFS) = 0.9
TIME (MIN) = 144	DISCHARGE (CFS) = 1
TIME (MIN) = 150	DISCHARGE (CFS) = 1
TIME (MIN) = 156	DISCHARGE (CFS) = 1.1
TIME (MIN) = 162	DISCHARGE (CFS) = 1.1
TIME (MIN) = 168	DISCHARGE (CFS) = 1.2
TIME (MIN) = 174	DISCHARGE (CFS) = 1.2
TIME (MIN) = 180	DISCHARGE (CFS) = 1.3

TIME (MIN)	=	186	DISCHARGE (CFS)	=	1.4
TIME (MIN)	=	192	DISCHARGE (CFS)	=	1.5
TIME (MIN)	=	198	DISCHARGE (CFS)	=	1.6
TIME (MIN)	=	204	DISCHARGE (CFS)	=	1.7
TIME (MIN)	=	210	DISCHARGE (CFS)	=	2
TIME (MIN)	=	216	DISCHARGE (CFS)	=	2.1
TIME (MIN)	=	222	DISCHARGE (CFS)	=	2.6
TIME (MIN)	=	228	DISCHARGE (CFS)	=	3
TIME (MIN)	=	234	DISCHARGE (CFS)	=	4.4
TIME (MIN)	=	240	DISCHARGE (CFS)	=	10.3
TIME (MIN)	=	246	DISCHARGE (CFS)	=	18
TIME (MIN)	=	252	DISCHARGE (CFS)	=	3.5
TIME (MIN)	=	258	DISCHARGE (CFS)	=	2.4
TIME (MIN)	=	264	DISCHARGE (CFS)	=	1.8
TIME (MIN)	=	270	DISCHARGE (CFS)	=	1.5
TIME (MIN)	=	276	DISCHARGE (CFS)	=	1.3
TIME (MIN)	=	282	DISCHARGE (CFS)	=	1.2
TIME (MIN)	=	288	DISCHARGE (CFS)	=	1.1
TIME (MIN)	=	294	DISCHARGE (CFS)	=	1
TIME (MIN)	=	300	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	306	DISCHARGE (CFS)	=	0.9
TIME (MIN)	=	312	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	318	DISCHARGE (CFS)	=	0.8
TIME (MIN)	=	324	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	330	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	336	DISCHARGE (CFS)	=	0.7
TIME (MIN)	=	342	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	348	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	354	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	360	DISCHARGE (CFS)	=	0.6
TIME (MIN)	=	366	DISCHARGE (CFS)	=	0

Detention 24 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree view of the project components. The 'Basin Inflow' element is selected and highlighted. Below the tree view, there are tabs for 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a sub-tab for 'Source'. The 'Basin Inflow' configuration panel is visible, containing fields for 'Basin Name', 'Element Name', 'Description', 'Downstream', 'Area (MI2)', and 'Flow Method'.

Detention 24

- Basin Models
 - Basin 24
 - Basin Inflow**
 - Discharge Gage
 - Detention Basin 24
 - Outlets
 - Outlet 1
- Meteorologic Models
 - Sierra
- Control Specifications
 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 251 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:06
- Paired Data
 - Elevation-Storage Functions
 - Basin 24 Stage-Storage

Components Compute Results

Source Inflow Options

Basin Name: Basin 24
Element Name: Basin Inflow

Description: Node 251

Downstream: Detention Basin 24

Area (MI2) 0.0047

Flow Method: Discharge Gage

Detention 24

Basin Models

Basin 24

Basin Inflow

Discharge Gage

Detention Basin 24

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 251 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:06

Paired Data

Elevation-Storage Functions

Basin 24 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 24

Element Name: Detention Basin 24

Method: Orifice Outlet

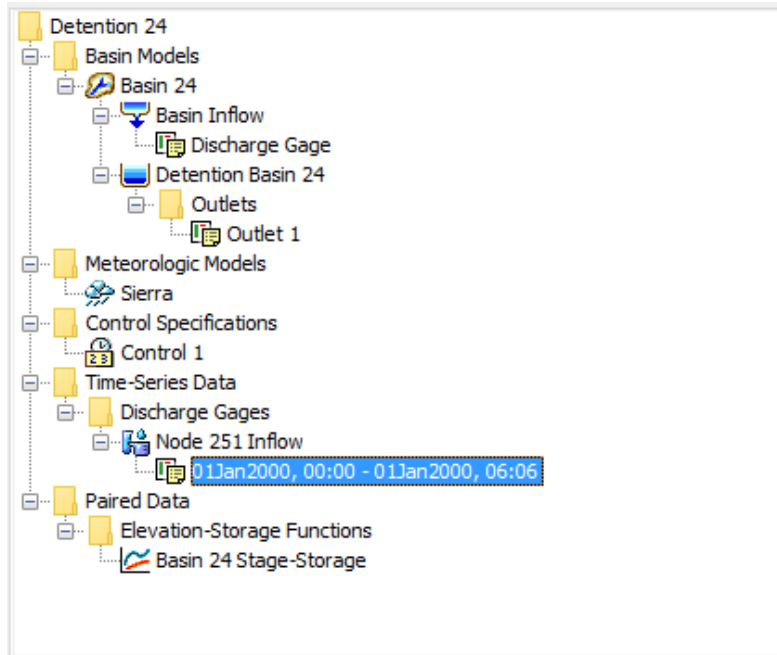
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.5

*Area (FT2) 0.785

*Coefficient: 0.6



Components Compute Results

Time-Series Gage Time Window Table Graph

Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.0
01Jan2000, 00:06	0.6
01Jan2000, 00:12	0.6
01Jan2000, 00:18	0.6
01Jan2000, 00:24	0.6
01Jan2000, 00:30	0.6
01Jan2000, 00:36	0.6
01Jan2000, 00:42	0.6
01Jan2000, 00:48	0.6
01Jan2000, 00:54	0.7
01Jan2000, 01:00	0.7
01Jan2000, 01:06	0.7
01Jan2000, 01:12	0.7
01Jan2000, 01:18	0.7
01Jan2000, 01:24	0.7
01Jan2000, 01:30	0.7
01Jan2000, 01:36	0.8
01Jan2000, 01:42	0.8
01Jan2000, 01:48	0.8
01Jan2000, 01:54	0.8
01Jan2000, 02:00	0.8
01Jan2000, 02:06	0.9
01Jan2000, 02:12	0.9
01Jan2000, 02:18	0.9
01Jan2000, 02:24	1.0

Detention 24

Basin Models

Basin 24

Basin Inflow

Discharge Gage

Detention Basin 24

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 251 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:06

Paired Data

Elevation-Storage Functions

Basin 24 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
3.5	0.585

Project: Detention 24 Simulation Run: Run 1
Reservoir: Detention Basin 24

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 24
End of Run:	01Jan2000, 06:06	Meteorologic Model:	Sierra
Compute Time:	16Jan2017, 17:18:35	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	18.0 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:06
Peak Discharge:	4.5 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:12
Inflow Volume:	0.8 (AC-FT)	Peak Storage:	0.3 (AC-FT)
Discharge Volume:	0.7 (AC-FT)	Peak Elevation:	1.9 (FT)

Project: Detention 24 Simulation Run: Run 1
Reservoir: Detention Basin 24

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 24
End of Run: 01Jan2000, 06:06 Meteorologic Model: Sierra
Compute Time: 16Jan2017, 17:18:35 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0
01Jan2000	00:02	0.2	0.0	0.0	0.0
01Jan2000	00:03	0.3	0.0	0.0	0.0
01Jan2000	00:04	0.4	0.0	0.0	0.0
01Jan2000	00:05	0.5	0.0	0.0	0.0
01Jan2000	00:06	0.6	0.0	0.0	0.0
01Jan2000	00:07	0.6	0.0	0.0	0.0
01Jan2000	00:08	0.6	0.0	0.0	0.0
01Jan2000	00:09	0.6	0.0	0.0	0.0
01Jan2000	00:10	0.6	0.0	0.0	0.0
01Jan2000	00:11	0.6	0.0	0.0	0.0
01Jan2000	00:12	0.6	0.0	0.0	0.0
01Jan2000	00:13	0.6	0.0	0.0	0.0
01Jan2000	00:14	0.6	0.0	0.1	0.0
01Jan2000	00:15	0.6	0.0	0.1	0.0
01Jan2000	00:16	0.6	0.0	0.1	0.0
01Jan2000	00:17	0.6	0.0	0.1	0.0
01Jan2000	00:18	0.6	0.0	0.1	0.0
01Jan2000	00:19	0.6	0.0	0.1	0.0
01Jan2000	00:20	0.6	0.0	0.1	0.0
01Jan2000	00:21	0.6	0.0	0.1	0.0
01Jan2000	00:22	0.6	0.0	0.1	0.0
01Jan2000	00:23	0.6	0.0	0.1	0.0
01Jan2000	00:24	0.6	0.0	0.1	0.0
01Jan2000	00:25	0.6	0.0	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	0.6	0.0	0.1	0.0
01Jan2000	00:27	0.6	0.0	0.1	0.0
01Jan2000	00:28	0.6	0.0	0.1	0.0
01Jan2000	00:29	0.6	0.0	0.1	0.0
01Jan2000	00:30	0.6	0.0	0.1	0.0
01Jan2000	00:31	0.6	0.0	0.1	0.0
01Jan2000	00:32	0.6	0.0	0.1	0.0
01Jan2000	00:33	0.6	0.0	0.1	0.0
01Jan2000	00:34	0.6	0.0	0.2	0.0
01Jan2000	00:35	0.6	0.0	0.2	0.0
01Jan2000	00:36	0.6	0.0	0.2	0.0
01Jan2000	00:37	0.6	0.0	0.2	0.0
01Jan2000	00:38	0.6	0.0	0.2	0.0
01Jan2000	00:39	0.6	0.0	0.2	0.0
01Jan2000	00:40	0.6	0.0	0.2	0.0
01Jan2000	00:41	0.6	0.0	0.2	0.0
01Jan2000	00:42	0.6	0.0	0.2	0.0
01Jan2000	00:43	0.6	0.0	0.2	0.0
01Jan2000	00:44	0.6	0.0	0.2	0.0
01Jan2000	00:45	0.6	0.0	0.2	0.0
01Jan2000	00:46	0.6	0.0	0.2	0.0
01Jan2000	00:47	0.6	0.0	0.2	0.0
01Jan2000	00:48	0.6	0.0	0.2	0.0
01Jan2000	00:49	0.6	0.0	0.2	0.0
01Jan2000	00:50	0.6	0.0	0.2	0.0
01Jan2000	00:51	0.6	0.0	0.2	0.0
01Jan2000	00:52	0.7	0.0	0.2	0.0
01Jan2000	00:53	0.7	0.0	0.2	0.0
01Jan2000	00:54	0.7	0.0	0.3	0.0
01Jan2000	00:55	0.7	0.0	0.3	0.0
01Jan2000	00:56	0.7	0.0	0.3	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	0.7	0.0	0.3	0.0
01Jan2000	00:58	0.7	0.0	0.3	0.0
01Jan2000	00:59	0.7	0.0	0.3	0.0
01Jan2000	01:00	0.7	0.0	0.3	0.0
01Jan2000	01:01	0.7	0.0	0.3	0.0
01Jan2000	01:02	0.7	0.1	0.3	0.0
01Jan2000	01:03	0.7	0.1	0.3	0.0
01Jan2000	01:04	0.7	0.1	0.3	0.0
01Jan2000	01:05	0.7	0.1	0.3	0.0
01Jan2000	01:06	0.7	0.1	0.3	0.0
01Jan2000	01:07	0.7	0.1	0.3	0.0
01Jan2000	01:08	0.7	0.1	0.3	0.0
01Jan2000	01:09	0.7	0.1	0.3	0.0
01Jan2000	01:10	0.7	0.1	0.3	0.0
01Jan2000	01:11	0.7	0.1	0.4	0.0
01Jan2000	01:12	0.7	0.1	0.4	0.0
01Jan2000	01:13	0.7	0.1	0.4	0.0
01Jan2000	01:14	0.7	0.1	0.4	0.0
01Jan2000	01:15	0.7	0.1	0.4	0.0
01Jan2000	01:16	0.7	0.1	0.4	0.0
01Jan2000	01:17	0.7	0.1	0.4	0.0
01Jan2000	01:18	0.7	0.1	0.4	0.0
01Jan2000	01:19	0.7	0.1	0.4	0.0
01Jan2000	01:20	0.7	0.1	0.4	0.0
01Jan2000	01:21	0.7	0.1	0.4	0.0
01Jan2000	01:22	0.7	0.1	0.4	0.0
01Jan2000	01:23	0.7	0.1	0.4	0.0
01Jan2000	01:24	0.7	0.1	0.4	0.0
01Jan2000	01:25	0.7	0.1	0.4	0.0
01Jan2000	01:26	0.7	0.1	0.4	0.0
01Jan2000	01:27	0.7	0.1	0.4	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	0.7	0.1	0.5	0.0
01Jan2000	01:29	0.7	0.1	0.5	0.0
01Jan2000	01:30	0.7	0.1	0.5	0.0
01Jan2000	01:31	0.7	0.1	0.5	0.0
01Jan2000	01:32	0.7	0.1	0.5	0.0
01Jan2000	01:33	0.7	0.1	0.5	0.0
01Jan2000	01:34	0.8	0.1	0.5	0.0
01Jan2000	01:35	0.8	0.1	0.5	0.0
01Jan2000	01:36	0.8	0.1	0.5	0.0
01Jan2000	01:37	0.8	0.1	0.5	0.3
01Jan2000	01:38	0.8	0.1	0.5	0.4
01Jan2000	01:39	0.8	0.1	0.5	0.4
01Jan2000	01:40	0.8	0.1	0.5	0.5
01Jan2000	01:41	0.8	0.1	0.5	0.5
01Jan2000	01:42	0.8	0.1	0.5	0.5
01Jan2000	01:43	0.8	0.1	0.5	0.6
01Jan2000	01:44	0.8	0.1	0.5	0.6
01Jan2000	01:45	0.8	0.1	0.5	0.6
01Jan2000	01:46	0.8	0.1	0.5	0.6
01Jan2000	01:47	0.8	0.1	0.5	0.6
01Jan2000	01:48	0.8	0.1	0.5	0.7
01Jan2000	01:49	0.8	0.1	0.5	0.7
01Jan2000	01:50	0.8	0.1	0.5	0.7
01Jan2000	01:51	0.8	0.1	0.5	0.7
01Jan2000	01:52	0.8	0.1	0.5	0.7
01Jan2000	01:53	0.8	0.1	0.5	0.7
01Jan2000	01:54	0.8	0.1	0.5	0.7
01Jan2000	01:55	0.8	0.1	0.5	0.7
01Jan2000	01:56	0.8	0.1	0.5	0.7
01Jan2000	01:57	0.8	0.1	0.5	0.7
01Jan2000	01:58	0.8	0.1	0.5	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	0.8	0.1	0.5	0.7
01Jan2000	02:00	0.8	0.1	0.5	0.7
01Jan2000	02:01	0.8	0.1	0.5	0.8
01Jan2000	02:02	0.8	0.1	0.5	0.8
01Jan2000	02:03	0.9	0.1	0.5	0.8
01Jan2000	02:04	0.9	0.1	0.5	0.8
01Jan2000	02:05	0.9	0.1	0.5	0.8
01Jan2000	02:06	0.9	0.1	0.5	0.8
01Jan2000	02:07	0.9	0.1	0.5	0.8
01Jan2000	02:08	0.9	0.1	0.5	0.8
01Jan2000	02:09	0.9	0.1	0.5	0.8
01Jan2000	02:10	0.9	0.1	0.5	0.8
01Jan2000	02:11	0.9	0.1	0.5	0.8
01Jan2000	02:12	0.9	0.1	0.5	0.8
01Jan2000	02:13	0.9	0.1	0.5	0.8
01Jan2000	02:14	0.9	0.1	0.5	0.8
01Jan2000	02:15	0.9	0.1	0.5	0.8
01Jan2000	02:16	0.9	0.1	0.5	0.8
01Jan2000	02:17	0.9	0.1	0.6	0.8
01Jan2000	02:18	0.9	0.1	0.6	0.9
01Jan2000	02:19	0.9	0.1	0.6	0.9
01Jan2000	02:20	0.9	0.1	0.6	0.9
01Jan2000	02:21	1.0	0.1	0.6	0.9
01Jan2000	02:22	1.0	0.1	0.6	0.9
01Jan2000	02:23	1.0	0.1	0.6	0.9
01Jan2000	02:24	1.0	0.1	0.6	0.9
01Jan2000	02:25	1.0	0.1	0.6	0.9
01Jan2000	02:26	1.0	0.1	0.6	0.9
01Jan2000	02:27	1.0	0.1	0.6	0.9
01Jan2000	02:28	1.0	0.1	0.6	0.9
01Jan2000	02:29	1.0	0.1	0.6	0.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	1.0	0.1	0.6	0.9
01Jan2000	02:31	1.0	0.1	0.6	0.9
01Jan2000	02:32	1.0	0.1	0.6	0.9
01Jan2000	02:33	1.0	0.1	0.6	0.9
01Jan2000	02:34	1.1	0.1	0.6	0.9
01Jan2000	02:35	1.1	0.1	0.6	1.0
01Jan2000	02:36	1.1	0.1	0.6	1.0
01Jan2000	02:37	1.1	0.1	0.6	1.0
01Jan2000	02:38	1.1	0.1	0.6	1.0
01Jan2000	02:39	1.1	0.1	0.6	1.0
01Jan2000	02:40	1.1	0.1	0.6	1.0
01Jan2000	02:41	1.1	0.1	0.6	1.0
01Jan2000	02:42	1.1	0.1	0.6	1.0
01Jan2000	02:43	1.1	0.1	0.6	1.0
01Jan2000	02:44	1.1	0.1	0.6	1.0
01Jan2000	02:45	1.2	0.1	0.6	1.0
01Jan2000	02:46	1.2	0.1	0.6	1.0
01Jan2000	02:47	1.2	0.1	0.6	1.0
01Jan2000	02:48	1.2	0.1	0.6	1.0
01Jan2000	02:49	1.2	0.1	0.6	1.1
01Jan2000	02:50	1.2	0.1	0.6	1.1
01Jan2000	02:51	1.2	0.1	0.6	1.1
01Jan2000	02:52	1.2	0.1	0.6	1.1
01Jan2000	02:53	1.2	0.1	0.6	1.1
01Jan2000	02:54	1.2	0.1	0.6	1.1
01Jan2000	02:55	1.2	0.1	0.6	1.1
01Jan2000	02:56	1.2	0.1	0.6	1.1
01Jan2000	02:57	1.2	0.1	0.6	1.1
01Jan2000	02:58	1.3	0.1	0.6	1.1
01Jan2000	02:59	1.3	0.1	0.6	1.1
01Jan2000	03:00	1.3	0.1	0.6	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	1.3	0.1	0.6	1.1
01Jan2000	03:02	1.3	0.1	0.6	1.2
01Jan2000	03:03	1.4	0.1	0.6	1.2
01Jan2000	03:04	1.4	0.1	0.6	1.2
01Jan2000	03:05	1.4	0.1	0.6	1.2
01Jan2000	03:06	1.4	0.1	0.6	1.2
01Jan2000	03:07	1.4	0.1	0.6	1.2
01Jan2000	03:08	1.4	0.1	0.6	1.2
01Jan2000	03:09	1.4	0.1	0.6	1.2
01Jan2000	03:10	1.5	0.1	0.6	1.2
01Jan2000	03:11	1.5	0.1	0.6	1.2
01Jan2000	03:12	1.5	0.1	0.6	1.3
01Jan2000	03:13	1.5	0.1	0.6	1.3
01Jan2000	03:14	1.5	0.1	0.6	1.3
01Jan2000	03:15	1.6	0.1	0.6	1.3
01Jan2000	03:16	1.6	0.1	0.6	1.3
01Jan2000	03:17	1.6	0.1	0.6	1.3
01Jan2000	03:18	1.6	0.1	0.6	1.3
01Jan2000	03:19	1.6	0.1	0.6	1.3
01Jan2000	03:20	1.6	0.1	0.6	1.4
01Jan2000	03:21	1.6	0.1	0.6	1.4
01Jan2000	03:22	1.7	0.1	0.6	1.4
01Jan2000	03:23	1.7	0.1	0.6	1.4
01Jan2000	03:24	1.7	0.1	0.6	1.4
01Jan2000	03:25	1.8	0.1	0.6	1.4
01Jan2000	03:26	1.8	0.1	0.6	1.4
01Jan2000	03:27	1.9	0.1	0.6	1.4
01Jan2000	03:28	1.9	0.1	0.6	1.5
01Jan2000	03:29	2.0	0.1	0.7	1.5
01Jan2000	03:30	2.0	0.1	0.7	1.5
01Jan2000	03:31	2.0	0.1	0.7	1.5

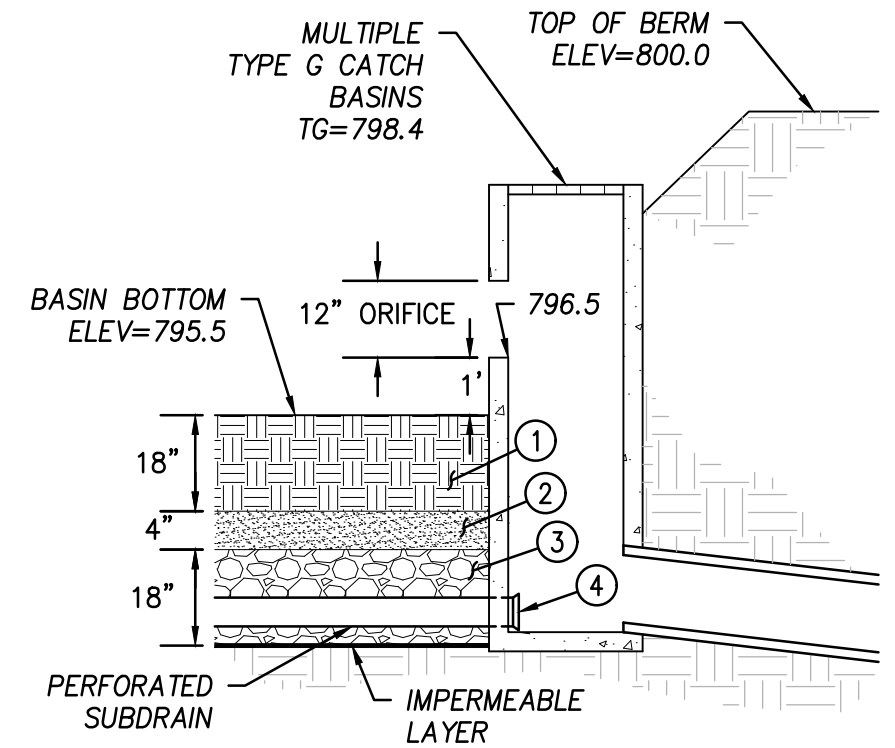
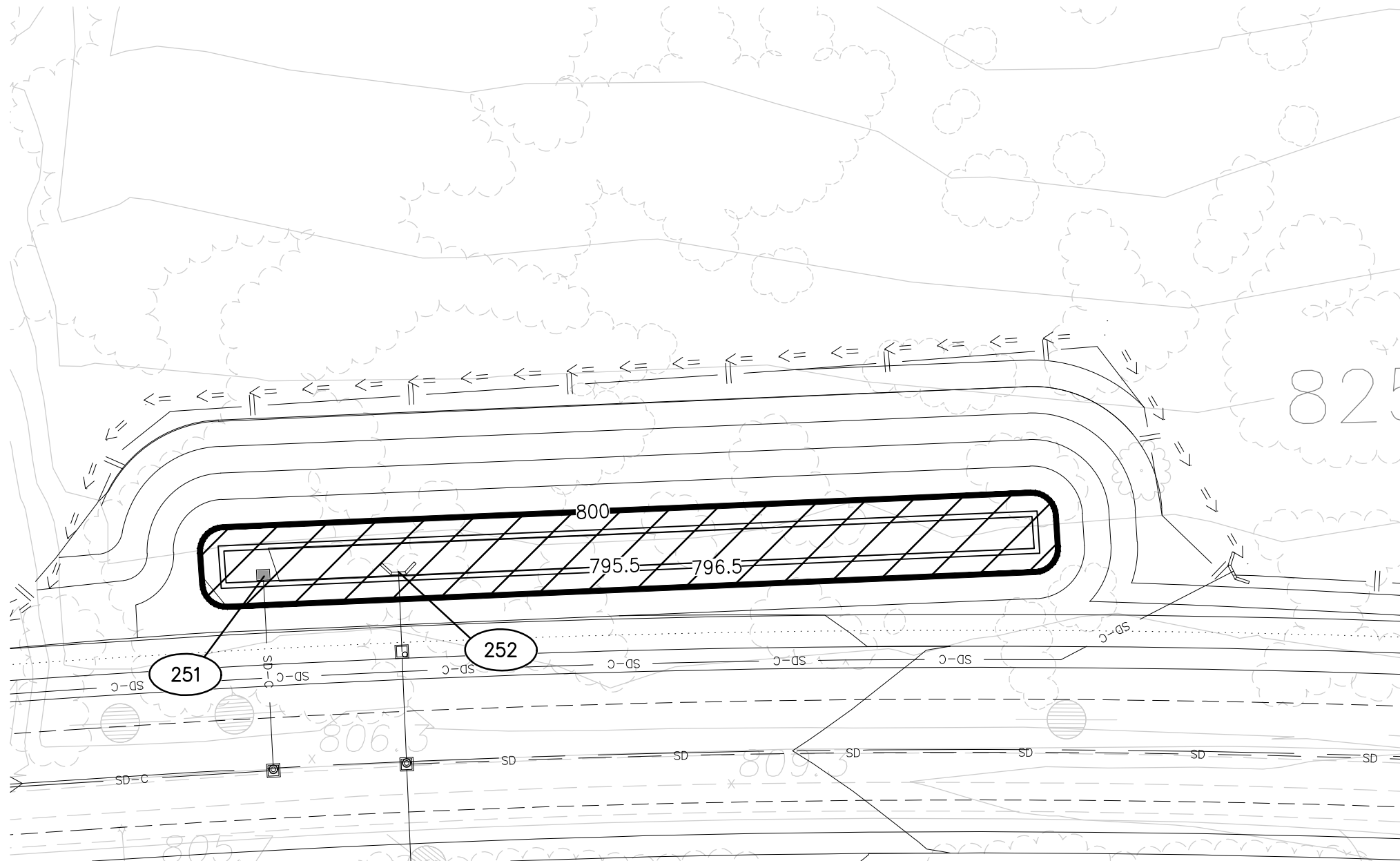
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	2.0	0.1	0.7	1.5
01Jan2000	03:33	2.0	0.1	0.7	1.6
01Jan2000	03:34	2.1	0.1	0.7	1.6
01Jan2000	03:35	2.1	0.1	0.7	1.6
01Jan2000	03:36	2.1	0.1	0.7	1.6
01Jan2000	03:37	2.2	0.1	0.7	1.6
01Jan2000	03:38	2.3	0.1	0.7	1.7
01Jan2000	03:39	2.4	0.1	0.7	1.7
01Jan2000	03:40	2.4	0.1	0.7	1.7
01Jan2000	03:41	2.5	0.1	0.7	1.7
01Jan2000	03:42	2.6	0.1	0.7	1.8
01Jan2000	03:43	2.7	0.1	0.7	1.8
01Jan2000	03:44	2.7	0.1	0.7	1.8
01Jan2000	03:45	2.8	0.1	0.7	1.8
01Jan2000	03:46	2.9	0.1	0.7	1.9
01Jan2000	03:47	2.9	0.1	0.8	1.9
01Jan2000	03:48	3.0	0.1	0.8	1.9
01Jan2000	03:49	3.2	0.1	0.8	2.0
01Jan2000	03:50	3.5	0.1	0.8	2.0
01Jan2000	03:51	3.7	0.1	0.8	2.1
01Jan2000	03:52	3.9	0.1	0.8	2.1
01Jan2000	03:53	4.2	0.1	0.8	2.2
01Jan2000	03:54	4.4	0.1	0.8	2.2
01Jan2000	03:55	5.4	0.1	0.9	2.3
01Jan2000	03:56	6.4	0.1	0.9	2.4
01Jan2000	03:57	7.4	0.2	0.9	2.5
01Jan2000	03:58	8.3	0.2	1.0	2.6
01Jan2000	03:59	9.3	0.2	1.0	2.7
01Jan2000	04:00	10.3	0.2	1.1	2.9
01Jan2000	04:01	11.6	0.2	1.1	3.0
01Jan2000	04:02	12.9	0.2	1.2	3.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	14.2	0.2	1.3	3.4
01Jan2000	04:04	15.4	0.2	1.4	3.6
01Jan2000	04:05	16.7	0.3	1.5	3.8
01Jan2000	04:06	18.0	0.3	1.6	4.0
01Jan2000	04:07	15.6	0.3	1.7	4.2
01Jan2000	04:08	13.2	0.3	1.8	4.3
01Jan2000	04:09	10.8	0.3	1.9	4.4
01Jan2000	04:10	8.3	0.3	1.9	4.5
01Jan2000	04:11	5.9	0.3	1.9	4.5
01Jan2000	04:12	3.5	0.3	1.9	4.5
01Jan2000	04:13	3.3	0.3	1.9	4.5
01Jan2000	04:14	3.1	0.3	1.9	4.5
01Jan2000	04:15	3.0	0.3	1.9	4.5
01Jan2000	04:16	2.8	0.3	1.9	4.4
01Jan2000	04:17	2.6	0.3	1.9	4.4
01Jan2000	04:18	2.4	0.3	1.9	4.4
01Jan2000	04:19	2.3	0.3	1.8	4.4
01Jan2000	04:20	2.2	0.3	1.8	4.3
01Jan2000	04:21	2.1	0.3	1.8	4.3
01Jan2000	04:22	2.0	0.3	1.8	4.3
01Jan2000	04:23	1.9	0.3	1.8	4.3
01Jan2000	04:24	1.8	0.3	1.7	4.2
01Jan2000	04:25	1.8	0.3	1.7	4.2
01Jan2000	04:26	1.7	0.3	1.7	4.1
01Jan2000	04:27	1.6	0.3	1.7	4.1
01Jan2000	04:28	1.6	0.3	1.7	4.1
01Jan2000	04:29	1.6	0.3	1.6	4.0
01Jan2000	04:30	1.5	0.3	1.6	4.0
01Jan2000	04:31	1.5	0.3	1.6	4.0
01Jan2000	04:32	1.4	0.3	1.6	3.9
01Jan2000	04:33	1.4	0.3	1.6	3.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	1.4	0.3	1.5	3.9
01Jan2000	04:35	1.3	0.3	1.5	3.8
01Jan2000	04:36	1.3	0.3	1.5	3.8
01Jan2000	04:37	1.3	0.2	1.5	3.7
01Jan2000	04:38	1.3	0.2	1.5	3.7
01Jan2000	04:39	1.2	0.2	1.4	3.7
01Jan2000	04:40	1.2	0.2	1.4	3.6
01Jan2000	04:41	1.2	0.2	1.4	3.6
01Jan2000	04:42	1.2	0.2	1.4	3.5
01Jan2000	04:43	1.2	0.2	1.4	3.5
01Jan2000	04:44	1.2	0.2	1.3	3.5
01Jan2000	04:45	1.2	0.2	1.3	3.4
01Jan2000	04:46	1.1	0.2	1.3	3.4
01Jan2000	04:47	1.1	0.2	1.3	3.4
01Jan2000	04:48	1.1	0.2	1.3	3.3
01Jan2000	04:49	1.1	0.2	1.3	3.3
01Jan2000	04:50	1.1	0.2	1.2	3.2
01Jan2000	04:51	1.0	0.2	1.2	3.2
01Jan2000	04:52	1.0	0.2	1.2	3.2
01Jan2000	04:53	1.0	0.2	1.2	3.1
01Jan2000	04:54	1.0	0.2	1.2	3.1
01Jan2000	04:55	1.0	0.2	1.1	3.0
01Jan2000	04:56	1.0	0.2	1.1	3.0
01Jan2000	04:57	1.0	0.2	1.1	3.0
01Jan2000	04:58	0.9	0.2	1.1	2.9
01Jan2000	04:59	0.9	0.2	1.1	2.9
01Jan2000	05:00	0.9	0.2	1.1	2.8
01Jan2000	05:01	0.9	0.2	1.0	2.8
01Jan2000	05:02	0.9	0.2	1.0	2.8
01Jan2000	05:03	0.9	0.2	1.0	2.7
01Jan2000	05:04	0.9	0.2	1.0	2.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	0.9	0.2	1.0	2.6
01Jan2000	05:06	0.9	0.2	1.0	2.6
01Jan2000	05:07	0.9	0.2	1.0	2.6
01Jan2000	05:08	0.9	0.2	0.9	2.5
01Jan2000	05:09	0.9	0.2	0.9	2.5
01Jan2000	05:10	0.8	0.2	0.9	2.4
01Jan2000	05:11	0.8	0.2	0.9	2.4
01Jan2000	05:12	0.8	0.1	0.9	2.4
01Jan2000	05:13	0.8	0.1	0.9	2.3
01Jan2000	05:14	0.8	0.1	0.9	2.3
01Jan2000	05:15	0.8	0.1	0.9	2.3
01Jan2000	05:16	0.8	0.1	0.8	2.2
01Jan2000	05:17	0.8	0.1	0.8	2.2
01Jan2000	05:18	0.8	0.1	0.8	2.1
01Jan2000	05:19	0.8	0.1	0.8	2.1
01Jan2000	05:20	0.8	0.1	0.8	2.1
01Jan2000	05:21	0.7	0.1	0.8	2.0
01Jan2000	05:22	0.7	0.1	0.8	2.0
01Jan2000	05:23	0.7	0.1	0.8	2.0
01Jan2000	05:24	0.7	0.1	0.8	1.9
01Jan2000	05:25	0.7	0.1	0.7	1.9
01Jan2000	05:26	0.7	0.1	0.7	1.8
01Jan2000	05:27	0.7	0.1	0.7	1.8
01Jan2000	05:28	0.7	0.1	0.7	1.8
01Jan2000	05:29	0.7	0.1	0.7	1.7
01Jan2000	05:30	0.7	0.1	0.7	1.7
01Jan2000	05:31	0.7	0.1	0.7	1.7
01Jan2000	05:32	0.7	0.1	0.7	1.6
01Jan2000	05:33	0.7	0.1	0.7	1.6
01Jan2000	05:34	0.7	0.1	0.7	1.6
01Jan2000	05:35	0.7	0.1	0.7	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	0.7	0.1	0.7	1.5
01Jan2000	05:37	0.7	0.1	0.7	1.5
01Jan2000	05:38	0.7	0.1	0.6	1.4
01Jan2000	05:39	0.6	0.1	0.6	1.4
01Jan2000	05:40	0.6	0.1	0.6	1.4
01Jan2000	05:41	0.6	0.1	0.6	1.3
01Jan2000	05:42	0.6	0.1	0.6	1.3
01Jan2000	05:43	0.6	0.1	0.6	1.3
01Jan2000	05:44	0.6	0.1	0.6	1.3
01Jan2000	05:45	0.6	0.1	0.6	1.2
01Jan2000	05:46	0.6	0.1	0.6	1.2
01Jan2000	05:47	0.6	0.1	0.6	1.2
01Jan2000	05:48	0.6	0.1	0.6	1.1
01Jan2000	05:49	0.6	0.1	0.6	1.1
01Jan2000	05:50	0.6	0.1	0.6	1.1
01Jan2000	05:51	0.6	0.1	0.6	1.1
01Jan2000	05:52	0.6	0.1	0.6	1.0
01Jan2000	05:53	0.6	0.1	0.6	1.0
01Jan2000	05:54	0.6	0.1	0.6	1.0
01Jan2000	05:55	0.6	0.1	0.6	1.0
01Jan2000	05:56	0.6	0.1	0.6	0.9
01Jan2000	05:57	0.6	0.1	0.6	0.9
01Jan2000	05:58	0.6	0.1	0.6	0.9
01Jan2000	05:59	0.6	0.1	0.6	0.9
01Jan2000	06:00	0.6	0.1	0.6	0.9
01Jan2000	06:01	0.5	0.1	0.5	0.8
01Jan2000	06:02	0.4	0.1	0.5	0.8
01Jan2000	06:03	0.3	0.1	0.5	0.8
01Jan2000	06:04	0.2	0.1	0.5	0.7
01Jan2000	06:05	0.1	0.1	0.5	0.7
01Jan2000	06:06	0.0	0.1	0.5	0.6

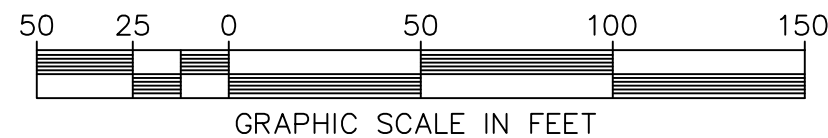


CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE

NOT TO SCALE



BASIN B - PROPOSED DETENTION 24 (BMP D4)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
796.5	0	4946	0.11	0.000
800	3.5	9623	0.22	0.585

NEWLAND SIERRA BASIN B - PROPOSED DETENTION BASINS DETENTION 24 (BMP D4)

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 25



Newland Sierra

Job #: 2660-02

Date:
2/16/2017

Run Name:
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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
1372	1371	2	1315	1313	80	0.52	0.24				
1371	1368	5	1313	1296	570	0.51	1.71				
1368	1364	3	1290	1287	100						
1364	1364	1						1 of 2			
1367	1366	2	1312	1310	80	0.51	0.12				
1366	1365	6	1310	1294	495	0.51	1.08	1 side			
1365	1364	3	1288	1287	30						
1364	1364	1						2 of 2			
1364	1360	3	1287	1279	240						
1360	1360	1						1 of 2			
1363	1362	2	1311	1309	80	0.51	0.10				
1362	1361	6	1309	1289	425	0.51	2.02	2 sides			
1361	1360	3	1283	1279	30						
1360	1360	1						2 of 2			
1360	1356	3	1279	1276	240						
1356	1356	1						1 of 3			
1370	1369	2	1308	1306	50	0.51	0.09				
1369	1359	6	1306	1282	1070	0.51	2.59	1 side			
1359	1356	3	1276.5	1276	25						
1356	1356	1						2 of 3			
1358	1357	2	1290	1288	70	0.51	0.04				
1357	1356	5	1288	1281	400	0.53	0.81				
1356	1356	1						3 of 3			
1356	1353.5	3	1275	1270	55						
1353.5	1353.5	1						1 of 2			
1355	1354	2	1290	1288	70	0.51	0.07				
1354	1353.5	5	1288	1278	400	0.52	1.08				
1353.5	1353.5	1						2 of 2			
1353.5	2296.5	3	1270	1260	1050						
2296.5	2296.5	1						1 of 2			
2299	2298	2	1273	1271	80	0.51	0.12				
2298	2297	6	1271	1269	215	0.51	0.44	1 SIDE			
2297	2296.5	3	1263	1260	50						
2296.5	2296.5	1						2 of 2			



Newland Sierra

Job #: 2660-02

Date:
2/16/2017

Run Name:
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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2296.5	2296	3	1260	1258	75						
2296	2296	1						1 of 2			
2295	2294	2	1272	1270	80	0.51	0.10				
2294	2293	6	1270	1265	225	0.51	0.53	1 SIDE			
2293	2296	3	1259	1258	40						
2296	2296	1						2 OF 2			
2296	2292	3	1258	1257	90						
2292	2292	10						SAVE TO BANK 1- 2292			
2498	2497	2	1295	1292	95	0.57	0.15				
2497	2496	5	1292	1291	175	0.57	1.51				
2496	2495	3	1285	1279	230						
2495	2495	1						1 OF 2			
2491	2490	2	1288	1286	80	0.54	0.11				
2490	2495	6	1286	1285	80	0.51	0.33	1 SIDE			
2495	2495	1						2 OF 2			
2495	2495.8	3	1279	1265	535						
2495.8	2495.8	1						1 OF 2			
2291	2290	2	1277	1276	65.00	0.51	0.11				
2290	2289	6	1276	1268	220	0.51	0.58	1 SIDE			
2289	2495.8	3	1268	1265	110						
2495.8	2495.8	1						2 OF 2			
2495.8	2288	3	1265	1263	110						
2288	2288	1						1 OF 2			
2287	2286	2	1277	1276	66.67	0.51	0.08				
2286	2285	6	1276	1269	230	0.51	0.58	1 SIDE			
2285	2288	3	1263	1260	40						
2288	2288	1						2 OF 2			
2288	2292	3	1260	1257	150						
2292	2292	11						ADD BANK 1 - 2292			
2292	2292	12						CLEAR BANK 1			
2292	2284	3	1257	1252	325						
2284	2284	1						1 OF 2			
2283	2282	2	1375	1350	100	0.25	0.32				
2282	2284	5	1350	1348	420	0.25	4.16				
2284	2284	1						2 OF 2			



Newland Sierra

Job #: 2660-02

Date:
2/16/2017

Run Name:
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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2284	2281	3	1252	1234	205						
2281	2281	1						1 OF 2			
2281	2281	7	Q=55.70		A=21.0	T _c =15.35		ADD RUN 25.2			
2281	2281	1						2 OF 2			
2281	2222	3	1234	1115	400						
2222	2222	10						SAVE TO BANK 1 - 2222			
2221	2220	2	1430	1403	100	0.35	0.87				
2220	2219	5	1403	1225	770	0.35	16.08				
2219	2219	10						SAVE TO BANK 2 - 2219			
2231	2230	2	1314	1310	95.00	0.57	0.17				
2230	2229	6	1310	1300	385	0.57	2.33	1 Side			
2229	2229.8	3	1294	1293	105						
2229	2229.8	8				0.57	0.47				
2229.8	2215	3	1293	1291	235						
2215	2215	1						1 of 3			
2218	2217	2	1344	1342	80	0.88	0.15				
2217	2216	6	1342	1321	410	0.55	0.82	1 SIDE			
2216	2215	3	1315	1291	340						
2215	2215	1						2 of 3			
2214	2213	2	1321	1315	97.50	0.57	0.26				
2213	2215	6	1315	1305	225	0.57	0.54	1 SIDE			
2215	2215	1						3 of 3			
2215	2212	3	1291	1287	50						
2212	2219	5	1287	1225	270		*				
2219	2219	11						ADD BANK 2 - 2219			
2219	2219	12						CLEAR BANK 2			
2219	2222	5	1225	1115	500	0.35	6.26				
2222	2222	11						ADD BANK 1 - 2222			
2222	2222	12						CLEAR BANK 1			
2222	2209	5	1115	960	1140	0.35	30.46				
2209	2208.8	3	954	942	140						
2208.8	2208.8	1						1 of 2			
2203	2202	2	1210	1165	100	0.25	0.27				
2202	2201	5	1165	945	665	0.25	6.32				
2201	2208.8	3	945	942	225						

[illegible]

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - BASIN 25 - SUBBASIN 25.1 *
* RESULTS TO BE INSERTED AS CODE 7 INTO RUN 25 *
* *

FILE NAME: P-25-1.DAT

TIME/DATE OF STUDY: 10:27 02/15/2017

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0313 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

P-25-1.TXT

FLOW PROCESS FROM NODE 1372.00 TO NODE 1371.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1315.00

DOWNSTREAM ELEVATION(FEET) = 1313.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.880

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.506

SUBAREA RUNOFF(CFS) = 0.94

TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.94

FLOW PROCESS FROM NODE 1371.00 TO NODE 1368.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1313.00 DOWNSTREAM(FEET) = 1296.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 570.00 CHANNEL SLOPE = 0.0298

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.020

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.58

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.39

AVERAGE FLOW DEPTH(FEET) = 0.29 TRAVEL TIME(MIN.) = 2.81

Tc(MIN.) = 9.69

SUBAREA AREA(ACRES) = 1.71 SUBAREA RUNOFF(CFS) = 5.25

AREA-AVERAGE RUNOFF COEFFICIENT = 0.511

TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 6.00

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.40 FLOW VELOCITY(FEET/SEC.) = 3.95

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1368.00 = 650.00 FEET.

FLOW PROCESS FROM NODE 1368.00 TO NODE 1364.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

P-25-1.TXT

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1290.00  DOWNSTREAM(FEET) = 1287.00
FLOW LENGTH(FEET) = 100.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.89
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.00
PIPE TRAVEL TIME(MIN.) = 0.19  Tc(MIN.) = 9.87
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1364.00 = 750.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 1364.00 TO NODE 1364.00 IS CODE = 1
-----
```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.87
RAINFALL INTENSITY(INCH/HR) = 5.95
TOTAL STREAM AREA(ACRES) = 1.95
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.00
```

```
*****
FLOW PROCESS FROM NODE 1367.00 TO NODE 1366.00 IS CODE = 21
-----
```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1312.00
DOWNSTREAM ELEVATION(FEET) = 1310.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.45
TOTAL AREA(ACRES) = 0.12  TOTAL RUNOFF(CFS) = 0.45
```

```
*****
FLOW PROCESS FROM NODE 1366.00 TO NODE 1365.00 IS CODE = 62
-----
```

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1310.00  DOWNSTREAM ELEVATION(FEET) = 1294.00
```


P-25-1.TXT
 STREET LENGTH(FEET) = 495.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00
 DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.15
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27
 HALFSTREET FLOOD WIDTH(FEET) = 7.18
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.40
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.92
 STREET FLOW TRAVEL TIME(MIN.) = 2.43 Tc(MIN.) = 9.42
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.127
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 1.08 SUBAREA RUNOFF(CFS) = 3.37
 TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 3.75

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.24
 FLOW VELOCITY(FEET/SEC.) = 3.86 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
 LONGEST FLOWPATH FROM NODE 1367.00 TO NODE 1365.00 = 575.00 FEET.

FLOW PROCESS FROM NODE 1365.00 TO NODE 1364.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1288.00 DOWNSTREAM(FEET) = 1287.00
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.11
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.75
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 9.49
 LONGEST FLOWPATH FROM NODE 1367.00 TO NODE 1364.00 = 605.00 FEET.

P-25-1.TXT

FLOW PROCESS FROM NODE 1364.00 TO NODE 1364.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	9.49
RAINFALL INTENSITY(INCH/HR) =	6.10
TOTAL STREAM AREA(ACRES) =	1.20
PEAK FLOW RATE(CFS) AT CONFLUENCE =	3.75

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.00	9.87	5.946	1.95
2	3.75	9.49	6.101	1.20

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.52	9.49	6.101
2	9.66	9.87	5.946

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) =	9.66	Tc(MIN.) =	9.87
TOTAL AREA(ACRES) =	3.2		
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1364.00 =	750.00	FEET.	

FLOW PROCESS FROM NODE 1364.00 TO NODE 1360.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1287.00	DOWNSTREAM(FEET) =	1279.00
FLOW LENGTH(FEET) =	240.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO	18.000		
DEPTH OF FLOW IN 18.0 INCH PIPE IS	9.3	INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	10.45		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	9.66		
PIPE TRAVEL TIME(MIN.) =	0.38	Tc(MIN.) =	10.26
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1360.00 =	990.00	FEET.	

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FLOW PROCESS FROM NODE 1360.00 TO NODE 1360.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	10.26
RAINFALL INTENSITY(INCH/HR) =	5.80
TOTAL STREAM AREA(ACRES) =	3.15
PEAK FLOW RATE(CFS) AT CONFLUENCE =	9.66

FLOW PROCESS FROM NODE 1363.00 TO NODE 1362.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.5100
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	80.00
UPSTREAM ELEVATION(FEET) =	1311.00
DOWNSTREAM ELEVATION(FEET) =	1309.00
ELEVATION DIFFERENCE(FEET) =	2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.423
SUBAREA RUNOFF(CFS) =	0.38
TOTAL AREA(ACRES) =	0.10
TOTAL RUNOFF(CFS) =	0.38

FLOW PROCESS FROM NODE 1362.00 TO NODE 1361.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	1309.00	DOWNSTREAM ELEVATION(FEET) =	1289.00
STREET LENGTH(FEET) =	425.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =	0.0150

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.68
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.25
 HALFSTREET FLOOD WIDTH(FEET) = 5.98
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.86
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.95
 STREET FLOW TRAVEL TIME(MIN.) = 1.83 Tc(MIN.) = 8.83
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.389
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 2.02 SUBAREA RUNOFF(CFS) = 6.58
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 6.91

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.17
 FLOW VELOCITY(FEET/SEC.) = 4.39 DEPTH*VELOCITY(FT*FT/SEC.) = 1.27
 LONGEST FLOWPATH FROM NODE 1363.00 TO NODE 1361.00 = 505.00 FEET.

FLOW PROCESS FROM NODE 1361.00 TO NODE 1360.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1283.00 DOWNSTREAM(FEET) = 1279.00
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.84
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.91
 PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 8.86
 LONGEST FLOWPATH FROM NODE 1363.00 TO NODE 1360.00 = 535.00 FEET.

FLOW PROCESS FROM NODE 1360.00 TO NODE 1360.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.86
 RAINFALL INTENSITY(INCH/HR) = 6.37
 TOTAL STREAM AREA(ACRES) = 2.12

PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.91

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.66	10.26	5.802	3.15
2	6.91	8.86	6.374	2.12

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	15.70	8.86	6.374
2	15.94	10.26	5.802

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 15.94 Tc(MIN.) = 10.26

TOTAL AREA(ACRES) = 5.3

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1360.00 = 990.00 FEET.

FLOW PROCESS FROM NODE 1360.00 TO NODE 1356.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1279.00 DOWNSTREAM(FEET) = 1276.00
 FLOW LENGTH(FEET) = 240.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.95
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 15.94
 PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 10.76
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1356.00 = 1230.00 FEET.

FLOW PROCESS FROM NODE 1356.00 TO NODE 1356.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.76
 RAINFALL INTENSITY(INCH/HR) = 5.63
 TOTAL STREAM AREA(ACRES) = 5.27
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.94

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FLOW PROCESS FROM NODE 1370.00 TO NODE 1369.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00

UPSTREAM ELEVATION(FEET) = 1308.00

DOWNSTREAM ELEVATION(FEET) = 1306.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.731

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.42

TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.42

FLOW PROCESS FROM NODE 1369.00 TO NODE 1359.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1306.00 DOWNSTREAM ELEVATION(FEET) = 1282.00

STREET LENGTH(FEET) = 1070.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

*TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.48

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.34

HALFSTREET FLOOD WIDTH(FEET) = 10.78

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.50

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.20

STREET FLOW TRAVEL TIME(MIN.) = 5.10 Tc(MIN.) = 9.83

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.962

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

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S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 2.59 SUBAREA RUNOFF(CFS) = 7.88
TOTAL AREA(ACRES) = 2.7 PEAK FLOW RATE(CFS) = 8.15

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.40 HALFSTREET FLOOD WIDTH(FEET) = 13.78
FLOW VELOCITY(FEET/SEC.) = 4.04 DEPTH*VELOCITY(FT*FT/SEC.) = 1.62
LONGEST FLOWPATH FROM NODE 1370.00 TO NODE 1359.00 = 1120.00 FEET.

FLOW PROCESS FROM NODE 1359.00 TO NODE 1356.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1276.50 DOWNSTREAM(FEET) = 1276.00
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.26
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.15
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 9.88
LONGEST FLOWPATH FROM NODE 1370.00 TO NODE 1356.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 1356.00 TO NODE 1356.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.88
RAINFALL INTENSITY(INCH/HR) = 5.94
TOTAL STREAM AREA(ACRES) = 2.68
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.15

FLOW PROCESS FROM NODE 1358.00 TO NODE 1357.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1290.00

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DOWNSTREAM ELEVATION(FEET) = 1288.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.262
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.976
SUBAREA RUNOFF(CFS) = 0.16
TOTAL AREA(ACRES) = 0.04 TOTAL RUNOFF(CFS) = 0.16

*****
FLOW PROCESS FROM NODE 1357.00 TO NODE 1356.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1288.00 DOWNSTREAM(FEET) = 1281.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.0175
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.118
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5300
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.49
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.09
AVERAGE FLOW DEPTH(FEET) = 0.21 TRAVEL TIME(MIN.) = 3.18
Tc(MIN.) = 9.45
SUBAREA AREA(ACRES) = 0.81 SUBAREA RUNOFF(CFS) = 2.63
AREA-AVERAGE RUNOFF COEFFICIENT = 0.529
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 2.75

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.29 FLOW VELOCITY(FEET/SEC.) = 2.60
LONGEST FLOWPATH FROM NODE 1358.00 TO NODE 1356.00 = 470.00 FEET.

*****
FLOW PROCESS FROM NODE 1356.00 TO NODE 1356.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
TIME OF CONCENTRATION(MIN.) = 9.45
RAINFALL INTENSITY(INCH/HR) = 6.12
TOTAL STREAM AREA(ACRES) = 0.85
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.75

** CONFLUENCE DATA **
STREAM RUNOFF Tc INTENSITY AREA

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NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	15.94	10.76	5.625	5.27
2	8.15	9.88	5.943	2.68
3	2.75	9.45	6.118	0.85

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	25.20	9.45	6.118
2	25.91	9.88	5.943
3	26.19	10.76	5.625

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.19 Tc(MIN.) = 10.76

TOTAL AREA(ACRES) = 8.8

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1356.00 = 1230.00 FEET.

FLOW PROCESS FROM NODE 1356.00 TO NODE 1353.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1275.00 DOWNSTREAM(Feet) = 1270.00

FLOW LENGTH(Feet) = 55.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.0 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 19.16

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 26.19

PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 10.81

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1353.50 = 1285.00 FEET.

FLOW PROCESS FROM NODE 1353.50 TO NODE 1353.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 10.81

RAINFALL INTENSITY(INCH/HR) = 5.61

TOTAL STREAM AREA(ACRES) = 8.80

PEAK FLOW RATE(CFS) AT CONFLUENCE = 26.19

FLOW PROCESS FROM NODE 1355.00 TO NODE 1354.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00

UPSTREAM ELEVATION(FEET) = 1290.00

DOWNSTREAM ELEVATION(FEET) = 1288.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.262

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.976

SUBAREA RUNOFF(CFS) = 0.28

TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.28

FLOW PROCESS FROM NODE 1354.00 TO NODE 1353.50 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1288.00 DOWNSTREAM(FEET) = 1278.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.0250

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.400

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.10

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.62

AVERAGE FLOW DEPTH(FEET) = 0.23 TRAVEL TIME(MIN.) = 2.55

Tc(MIN.) = 8.81

SUBAREA AREA(ACRES) = 1.08 SUBAREA RUNOFF(CFS) = 3.59

AREA-AVERAGE RUNOFF COEFFICIENT = 0.519

TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 3.82

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.32 FLOW VELOCITY(FEET/SEC.) = 3.24

LONGEST FLOWPATH FROM NODE 1355.00 TO NODE 1353.50 = 470.00 FEET.

FLOW PROCESS FROM NODE 1353.50 TO NODE 1353.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.81
 RAINFALL INTENSITY(INCH/HR) = 6.40
 TOTAL STREAM AREA(ACRES) = 1.15
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.82

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.19	10.81	5.609	8.80
2	3.82	8.81	6.400	1.15

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.77	8.81	6.400
2	29.54	10.81	5.609

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 29.54 Tc(MIN.) = 10.81
 TOTAL AREA(ACRES) = 10.0
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 1353.50 = 1285.00 FEET.

FLOW PROCESS FROM NODE 1353.50 TO NODE 2296.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1270.00 DOWNSTREAM(FEET) = 1260.00
 FLOW LENGTH(FEET) = 1050.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.55
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.54
 PIPE TRAVEL TIME(MIN.) = 2.05 Tc(MIN.) = 12.85
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2296.50 = 2335.00 FEET.

FLOW PROCESS FROM NODE 2296.50 TO NODE 2296.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

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CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 12.85
RAINFALL INTENSITY(INCH/HR) = 5.02
TOTAL STREAM AREA(ACRES) = 9.95
PEAK FLOW RATE(CFS) AT CONFLUENCE = 29.54

FLOW PROCESS FROM NODE 2299.00 TO NODE 2298.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1273.00
DOWNSTREAM ELEVATION(FEET) = 1271.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.45
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.45

FLOW PROCESS FROM NODE 2298.00 TO NODE 2297.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1271.00 DOWNSTREAM ELEVATION(FEET) = 1269.00
STREET LENGTH(FEET) = 215.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.17
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.18
AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.84
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.50

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STREET FLOW TRAVEL TIME(MIN.) = 1.94 Tc(MIN.) = 8.94

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.338

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 0.44 SUBAREA RUNOFF(CFS) = 1.42

TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 1.81

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 8.77

FLOW VELOCITY(FEET/SEC.) = 2.04 DEPTH*VELOCITY(FT*FT/SEC.) = 0.62

LONGEST FLOWPATH FROM NODE 2299.00 TO NODE 2297.00 = 295.00 FEET.

FLOW PROCESS FROM NODE 2297.00 TO NODE 2296.50 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1260.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 8.08

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 1.81

PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 9.05

LONGEST FLOWPATH FROM NODE 2299.00 TO NODE 2296.50 = 345.00 FEET.

FLOW PROCESS FROM NODE 2296.50 TO NODE 2296.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 9.05

RAINFALL INTENSITY(INCH/HR) = 6.29

TOTAL STREAM AREA(ACRES) = 0.56

PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.81

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	29.54	12.85	5.015	9.95
2	1.81	9.05	6.291	0.56

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RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	25.36	9.05	6.291
2	30.98	12.85	5.015

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 30.98 Tc(MIN.) = 12.85

TOTAL AREA(ACRES) = 10.5

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2296.50 = 2335.00 FEET.

FLOW PROCESS FROM NODE 2296.50 TO NODE 2296.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1260.00 DOWNSTREAM(FEET) = 1258.00

FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 12.59

ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 30.98

PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 12.95

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2296.00 = 2410.00 FEET.

FLOW PROCESS FROM NODE 2296.00 TO NODE 2296.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 12.95

RAINFALL INTENSITY(INCH/HR) = 4.99

TOTAL STREAM AREA(ACRES) = 10.51

PEAK FLOW RATE(CFS) AT CONFLUENCE = 30.98

FLOW PROCESS FROM NODE 2295.00 TO NODE 2294.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1272.00
DOWNSTREAM ELEVATION(FEET) = 1270.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 2294.00 TO NODE 2293.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1270.00 DOWNSTREAM ELEVATION(FEET) = 1265.00
STREET LENGTH(FEET) = 225.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.27
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.25
HALFSTREET FLOOD WIDTH(FEET) = 5.98
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.67
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.66
STREET FLOW TRAVEL TIME(MIN.) = 1.40 Tc(MIN.) = 8.40
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.598

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.53 SUBAREA RUNOFF(CFS) = 1.78
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 2.12

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.78
FLOW VELOCITY(FEET/SEC.) = 2.93 DEPTH*VELOCITY(FT*FT/SEC.) = 0.83

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LONGEST FLOWPATH FROM NODE 2295.00 TO NODE 2293.00 = 305.00 FEET.

FLOW PROCESS FROM NODE 2293.00 TO NODE 2296.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1258.00

FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 6.22

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 2.12

PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 8.51

LONGEST FLOWPATH FROM NODE 2295.00 TO NODE 2296.00 = 345.00 FEET.

FLOW PROCESS FROM NODE 2296.00 TO NODE 2296.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 8.51

RAINFALL INTENSITY(INCH/HR) = 6.54

TOTAL STREAM AREA(ACRES) = 0.63

PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.12

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	30.98	12.95	4.991	10.51
2	2.12	8.51	6.544	0.63

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	25.74	8.51	6.544
2	32.60	12.95	4.991

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 32.60 Tc(MIN.) = 12.95

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TOTAL AREA(ACRES) = 11.1
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2296.00 = 2410.00 FEET.

FLOW PROCESS FROM NODE 2296.00 TO NODE 2292.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1258.00 DOWNSTREAM(FEET) = 1257.00
 FLOW LENGTH(FEET) = 90.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 20.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.27
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 32.60
 PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 13.12
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2292.00 = 2500.00 FEET.

FLOW PROCESS FROM NODE 2292.00 TO NODE 2292.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

=====

FLOW PROCESS FROM NODE 2498.00 TO NODE 2497.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1295.00

DOWNSTREAM ELEVATION(FEET) = 1292.00

ELEVATION DIFFERENCE(FEET) = 3.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914

SUBAREA RUNOFF(CFS) = 0.68

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.68

FLOW PROCESS FROM NODE 2497.00 TO NODE 2496.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1292.00 DOWNSTREAM(FEET) = 1291.00

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CHANNEL LENGTH THRU SUBAREA(FEET) = 175.00 CHANNEL SLOPE = 0.0057
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.896
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.66
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.93
 AVERAGE FLOW DEPTH(FEET) = 0.48 TRAVEL TIME(MIN.) = 1.51
 Tc(MIN.) = 7.85
 SUBAREA AREA(ACRES) = 1.51 SUBAREA RUNOFF(CFS) = 5.94
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 TOTAL AREA(ACRES) = 1.7 PEAK FLOW RATE(CFS) = 6.53

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.66 FLOW VELOCITY(FEET/SEC.) = 2.29
 LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2496.00 = 270.00 FEET.

FLOW PROCESS FROM NODE 2496.00 TO NODE 2495.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1285.00 DOWNSTREAM(FEET) = 1279.00
 FLOW LENGTH(FEET) = 230.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.63
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.53
 PIPE TRAVEL TIME(MIN.) = 0.44 Tc(MIN.) = 8.29
 LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2495.00 = 500.00 FEET.

FLOW PROCESS FROM NODE 2495.00 TO NODE 2495.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.29
 RAINFALL INTENSITY(INCH/HR) = 6.66
 TOTAL STREAM AREA(ACRES) = 1.66
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.53

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FLOW PROCESS FROM NODE 2491.00 TO NODE 2490.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5400

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1288.00

DOWNSTREAM ELEVATION(FEET) = 1286.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.643

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.677

SUBAREA RUNOFF(CFS) = 0.46

TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.46

FLOW PROCESS FROM NODE 2490.00 TO NODE 2495.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1286.00 DOWNSTREAM ELEVATION(FEET) = 1285.00

STREET LENGTH(FEET) = 80.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.06

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.25

HALFSTREET FLOOD WIDTH(FEET) = 6.38

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.03

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.51

STREET FLOW TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 7.30

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.224

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.518

SUBAREA AREA(ACRES) = 0.33 SUBAREA RUNOFF(CFS) = 1.22

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TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 1.64

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.91
 FLOW VELOCITY(FEET/SEC.) = 2.21 DEPTH*VELOCITY(FT*FT/SEC.) = 0.63
 LONGEST FLOWPATH FROM NODE 2491.00 TO NODE 2495.00 = 160.00 FEET.

FLOW PROCESS FROM NODE 2495.00 TO NODE 2495.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.30
 RAINFALL INTENSITY(INCH/HR) = 7.22
 TOTAL STREAM AREA(ACRES) = 0.44
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.64

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.53	8.29	6.655	1.66
2	1.64	7.30	7.224	0.44

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.39	7.30	7.224
2	8.04	8.29	6.655

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.04 Tc(MIN.) = 8.29
 TOTAL AREA(ACRES) = 2.1
 LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2495.00 = 500.00 FEET.

FLOW PROCESS FROM NODE 2495.00 TO NODE 2495.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1279.00 DOWNSTREAM(FEET) = 1265.00
 FLOW LENGTH(FEET) = 535.00 MANNING'S N = 0.013

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ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.12
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.04
PIPE TRAVEL TIME(MIN.) = 0.98 Tc(MIN.) = 9.27
LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2495.80 = 1035.00 FEET.

FLOW PROCESS FROM NODE 2495.80 TO NODE 2495.80 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.27
RAINFALL INTENSITY(INCH/HR) = 6.19
TOTAL STREAM AREA(ACRES) = 2.10
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.04

FLOW PROCESS FROM NODE 2291.00 TO NODE 2290.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1277.00
DOWNSTREAM ELEVATION(FEET) = 1276.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
SUBAREA RUNOFF(CFS) = 0.40
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.40

FLOW PROCESS FROM NODE 2290.00 TO NODE 2289.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1268.00
STREET LENGTH(FEET) = 220.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

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INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.37

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.24

HALFSTREET FLOOD WIDTH(FEET) = 5.45

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.30

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.78

STREET FLOW TRAVEL TIME(MIN.) = 1.11 Tc(MIN.) = 8.53

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.534

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 0.58 SUBAREA RUNOFF(CFS) = 1.93

TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.30

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.18

FLOW VELOCITY(FEET/SEC.) = 3.63 DEPTH*VELOCITY(FT*FT/SEC.) = 0.98

LONGEST FLOWPATH FROM NODE 2291.00 TO NODE 2289.00 = 285.00 FEET.

FLOW PROCESS FROM NODE 2289.00 TO NODE 2495.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 1265.00

FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 6.57

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 2.30

PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 8.81

LONGEST FLOWPATH FROM NODE 2291.00 TO NODE 2495.80 = 395.00 FEET.

FLOW PROCESS FROM NODE 2495.80 TO NODE 2495.80 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.81
RAINFALL INTENSITY(INCH/HR) = 6.40
TOTAL STREAM AREA(ACRES) = 0.69
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.30
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.04	9.27	6.193	2.10
2	2.30	8.81	6.400	0.69

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.08	8.81	6.400
2	10.27	9.27	6.193

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 10.27 Tc(MIN.) = 9.27
TOTAL AREA(ACRES) = 2.8
LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2495.80 = 1035.00 FEET.
```

```
FLOW PROCESS FROM NODE 2495.80 TO NODE 2288.00 IS CODE = 31
```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1265.00 DOWNSTREAM(FEET) = 1263.00
FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.37
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.27
PIPE TRAVEL TIME(MIN.) = 0.22 Tc(MIN.) = 9.49
LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2288.00 = 1145.00 FEET.
```

```
FLOW PROCESS FROM NODE 2288.00 TO NODE 2288.00 IS CODE = 1
```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.49
RAINFALL INTENSITY(INCH/HR) = 6.10
TOTAL STREAM AREA(ACRES) = 2.79
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.27
```

```
*****
FLOW PROCESS FROM NODE 2287.00 TO NODE 2286.00 IS CODE = 21
-----
```

```
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 66.67
UPSTREAM ELEVATION(FEET) = 1277.00
DOWNSTREAM ELEVATION(FEET) = 1276.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.575
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.054
SUBAREA RUNOFF(CFS) = 0.29
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.29
```

```
*****
FLOW PROCESS FROM NODE 2286.00 TO NODE 2285.00 IS CODE = 62
-----
```

```
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
```

```
UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1269.00
STREET LENGTH(FEET) = 230.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.23
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.23
HALFSTREET FLOOD WIDTH(FEET) = 5.38
```


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AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.02
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.71
 STREET FLOW TRAVEL TIME(MIN.) = 1.27 Tc(MIN.) = 8.84
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.383
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.58 SUBAREA RUNOFF(CFS) = 1.89
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.15

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.24
 FLOW VELOCITY(FEET/SEC.) = 3.34 DEPTH*VELOCITY(FT*FT/SEC.) = 0.91
 LONGEST FLOWPATH FROM NODE 2287.00 TO NODE 2285.00 = 296.67 FEET.

FLOW PROCESS FROM NODE 2285.00 TO NODE 2288.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1260.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.22
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.15
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 8.92
 LONGEST FLOWPATH FROM NODE 2287.00 TO NODE 2288.00 = 336.67 FEET.

FLOW PROCESS FROM NODE 2288.00 TO NODE 2288.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.92
 RAINFALL INTENSITY(INCH/HR) = 6.35
 TOTAL STREAM AREA(ACRES) = 0.66
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.15

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

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1	10.27	9.49	6.101	2.79
2	2.15	8.92	6.350	0.66

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	12.01	8.92	6.350
2	12.33	9.49	6.101

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 12.33 Tc(MIN.) = 9.49

TOTAL AREA(ACRES) = 3.4

LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2288.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 2288.00 TO NODE 2292.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1260.00 DOWNSTREAM(FEET) = 1257.00

FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 8.99

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 12.33

PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 9.77

LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2292.00 = 1295.00 FEET.

FLOW PROCESS FROM NODE 2292.00 TO NODE 2292.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK #1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.33	9.77	5.988	3.45

LONGEST FLOWPATH FROM NODE 2498.00 TO NODE 2292.00 = 1295.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	32.60	13.12	4.951	11.14

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LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2292.00 = 2500.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	36.60	9.77	5.988
2	42.79	13.12	4.951

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 42.79 Tc(MIN.) = 13.12
TOTAL AREA(ACRES) = 14.6

FLOW PROCESS FROM NODE 2292.00 TO NODE 2292.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2292.00 TO NODE 2284.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1257.00 DOWNSTREAM(FEET) = 1252.00
FLOW LENGTH(FEET) = 325.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 22.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.11
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.79
PIPE TRAVEL TIME(MIN.) = 0.49 Tc(MIN.) = 13.60
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2284.00 = 2825.00 FEET.

FLOW PROCESS FROM NODE 2284.00 TO NODE 2284.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.60
RAINFALL INTENSITY(INCH/HR) = 4.84
TOTAL STREAM AREA(ACRES) = 14.59
PEAK FLOW RATE(CFS) AT CONFLUENCE = 42.79

FLOW PROCESS FROM NODE 2283.00 TO NODE 2282.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1375.00

DOWNSTREAM ELEVATION(FEET) = 1350.00

ELEVATION DIFFERENCE(FEET) = 25.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.59

TOTAL AREA(ACRES) = 0.32 TOTAL RUNOFF(CFS) = 0.59

FLOW PROCESS FROM NODE 2282.00 TO NODE 2284.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1350.00 DOWNSTREAM(FEET) = 1348.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 420.00 CHANNEL SLOPE = 0.0048

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.015 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.104

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.79

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.94

AVERAGE FLOW DEPTH(FEET) = 0.35 TRAVEL TIME(MIN.) = 2.38

Tc(MIN.) = 9.48

SUBAREA AREA(ACRES) = 4.16 SUBAREA RUNOFF(CFS) = 6.35

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 6.84

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.49 FLOW VELOCITY(FEET/SEC.) = 3.55

LONGEST FLOWPATH FROM NODE 2283.00 TO NODE 2284.00 = 520.00 FEET.

FLOW PROCESS FROM NODE 2284.00 TO NODE 2284.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2

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CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 9.48
 RAINFALL INTENSITY(INCH/HR) = 6.10
 TOTAL STREAM AREA(ACRES) = 4.48
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.84

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	42.79	13.60	4.836	14.59
2	6.84	9.48	6.104	4.48

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	36.65	9.48	6.104
2	48.21	13.60	4.836

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 48.21 Tc(MIN.) = 13.60
 TOTAL AREA(ACRES) = 19.1
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2284.00 = 2825.00 FEET.

FLOW PROCESS FROM NODE 2284.00 TO NODE 2281.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1252.00 DOWNSTREAM(FEET) = 1234.00
 FLOW LENGTH(FEET) = 205.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 22.26
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 48.21
 PIPE TRAVEL TIME(MIN.) = 0.15 Tc(MIN.) = 13.76
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2281.00 = 3030.00 FEET.

FLOW PROCESS FROM NODE 2281.00 TO NODE 2281.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

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TIME OF CONCENTRATION(MIN.) = 13.76
RAINFALL INTENSITY(INCH/HR) = 4.80
TOTAL STREAM AREA(ACRES) = 19.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 48.21

FLOW PROCESS FROM NODE 2281.00 TO NODE 2281.00 IS CODE = 7

>>>>USER SPECIFIED HYDROLOGY INFORMATION AT NODE<<<<

=====

USER-SPECIFIED VALUES ARE AS FOLLOWS:

TC(MIN) = 15.35 RAIN INTENSITY(INCH/HOUR) = 4.47
TOTAL AREA(ACRES) = 21.00 TOTAL RUNOFF(CFS) = 55.70

FLOW PROCESS FROM NODE 2281.00 TO NODE 2281.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 15.35
RAINFALL INTENSITY(INCH/HR) = 4.47
TOTAL STREAM AREA(ACRES) = 21.00
PEAK FLOW RATE(CFS) AT CONFLUENCE = 55.70

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	48.21	13.76	4.801	19.07
2	55.70	15.35	4.473	21.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	98.12	13.76	4.801
2	100.62	15.35	4.473

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 100.62 Tc(MIN.) = 15.35
TOTAL AREA(ACRES) = 40.1
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2281.00 = 3030.00 FEET.

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FLOW PROCESS FROM NODE 2281.00 TO NODE 2222.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1234.00 DOWNSTREAM(Feet) = 1115.00
FLOW LENGTH(Feet) = 400.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.1 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 41.90
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 100.62
PIPE TRAVEL TIME(Min.) = 0.16 Tc(Min.) = 15.51
LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2222.00 = 3430.00 FEET.

FLOW PROCESS FROM NODE 2222.00 TO NODE 2222.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2221.00 TO NODE 2220.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 100.00
UPSTREAM ELEVATION(Feet) = 1430.00
DOWNSTREAM ELEVATION(Feet) = 1403.00
ELEVATION DIFFERENCE(Feet) = 27.00
SUBAREA OVERLAND TIME OF FLOW(Min.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 2.43
TOTAL AREA(ACRES) = 0.87 TOTAL RUNOFF(CFS) = 2.43

FLOW PROCESS FROM NODE 2220.00 TO NODE 2219.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1403.00 DOWNSTREAM(Feet) = 1225.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 770.00 CHANNEL SLOPE = 0.2312
CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.015 MAXIMUM DEPTH(Feet) = 10.00

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.481

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 23.49

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 19.79

AVERAGE FLOW DEPTH(FEET) = 0.33 TRAVEL TIME(MIN.) = 0.65

Tc(MIN.) = 6.92

SUBAREA AREA(ACRES) = 16.08 SUBAREA RUNOFF(CFS) = 42.10

AREA-AVERAGE RUNOFF COEFFICIENT = 0.350

TOTAL AREA(ACRES) = 17.0 PEAK FLOW RATE(CFS) = 44.38

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.47 FLOW VELOCITY(FEET/SEC.) = 24.08

LONGEST FLOWPATH FROM NODE 2221.00 TO NODE 2219.00 = 870.00 FEET.

FLOW PROCESS FROM NODE 2219.00 TO NODE 2219.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<

FLOW PROCESS FROM NODE 2231.00 TO NODE 2230.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1314.00

DOWNSTREAM ELEVATION(FEET) = 1310.00

ELEVATION DIFFERENCE(FEET) = 4.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.759

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.419

SUBAREA RUNOFF(CFS) = 0.82

TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 0.82

FLOW PROCESS FROM NODE 2230.00 TO NODE 2229.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1310.00 DOWNSTREAM ELEVATION(FEET) = 1300.00

STREET LENGTH(FEET) = 385.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.59
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.36
HALFSTREET FLOOD WIDTH(FEET) = 11.47
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.90
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.39
STREET FLOW TRAVEL TIME(MIN.) = 1.65 Tc(MIN.) = 7.40
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.158
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 2.33 SUBAREA RUNOFF(CFS) = 9.51
TOTAL AREA(ACRES) = 2.5 PEAK FLOW RATE(CFS) = 10.20

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.42 HALFSTREET FLOOD WIDTH(FEET) = 14.66
FLOW VELOCITY(FEET/SEC.) = 4.50 DEPTH*VELOCITY(FT*FT/SEC.) = 1.89
LONGEST FLOWPATH FROM NODE 2231.00 TO NODE 2229.00 = 480.00 FEET.

FLOW PROCESS FROM NODE 2229.00 TO NODE 2229.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1294.00 DOWNSTREAM(FEET) = 1293.00
FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.59
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.20
PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 7.67
LONGEST FLOWPATH FROM NODE 2231.00 TO NODE 2229.80 = 585.00 FEET.

FLOW PROCESS FROM NODE 2229.00 TO NODE 2229.80 IS CODE = 81

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>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

```
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.998
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.5700
SUBAREA AREA(ACRES) = 0.47 SUBAREA RUNOFF(CFS) = 1.87
TOTAL AREA(ACRES) = 3.0 TOTAL RUNOFF(CFS) = 11.85
TC(MIN.) = 7.67
```

FLOW PROCESS FROM NODE 2229.80 TO NODE 2215.00 IS CODE = 31

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-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
```

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1293.00 DOWNSTREAM(FEET) = 1291.00
FLOW LENGTH(FEET) = 235.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.48
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.85
PIPE TRAVEL TIME(MIN.) = 0.60 Tc(MIN.) = 8.27
LONGEST FLOWPATH FROM NODE 2231.00 TO NODE 2215.00 = 820.00 FEET.
```

FLOW PROCESS FROM NODE 2215.00 TO NODE 2215.00 IS CODE = 1

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-----
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.27
RAINFALL INTENSITY(INCH/HR) = 6.66
TOTAL STREAM AREA(ACRES) = 2.97
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.85
```

FLOW PROCESS FROM NODE 2218.00 TO NODE 2217.00 IS CODE = 21

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-----
>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
```

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1344.00
```

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DOWNSTREAM ELEVATION(FEET) = 1342.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.610
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 1.22
 TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 1.22

FLOW PROCESS FROM NODE 2217.00 TO NODE 2216.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1342.00 DOWNSTREAM ELEVATION(FEET) = 1321.00
 STREET LENGTH(FEET) = 410.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.30
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.28
 HALFSTREET FLOOD WIDTH(FEET) = 7.84
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.50
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.27
 STREET FLOW TRAVEL TIME(MIN.) = 1.52 Tc(MIN.) = 4.13
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.601
 SUBAREA AREA(ACRES) = 0.82 SUBAREA RUNOFF(CFS) = 4.16
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 5.38

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.77
 FLOW VELOCITY(FEET/SEC.) = 5.01 DEPTH*VELOCITY(FT*FT/SEC.) = 1.61
 LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2216.00 = 490.00 FEET.

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FLOW PROCESS FROM NODE 2216.00 TO NODE 2215.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1315.00 DOWNSTREAM(FEET) = 1291.00
 FLOW LENGTH(FEET) = 340.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.75
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.38
 PIPE TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 4.61
 LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2215.00 = 830.00 FEET.

FLOW PROCESS FROM NODE 2215.00 TO NODE 2215.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 4.61
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 0.97
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.38

FLOW PROCESS FROM NODE 2214.00 TO NODE 2213.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 97.50
 UPSTREAM ELEVATION(FEET) = 1321.00
 DOWNSTREAM ELEVATION(FEET) = 1315.00
 ELEVATION DIFFERENCE(FEET) = 6.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.141
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.058
 SUBAREA RUNOFF(CFS) = 1.34
 TOTAL AREA(ACRES) = 0.26 TOTAL RUNOFF(CFS) = 1.34

FLOW PROCESS FROM NODE 2213.00 TO NODE 2215.00 IS CODE = 62

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>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1315.00 DOWNSTREAM ELEVATION(FEET) = 1305.00
 STREET LENGTH(FEET) = 225.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.60
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27
 HALFSTREET FLOOD WIDTH(FEET) = 7.24
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.04
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.09
 STREET FLOW TRAVEL TIME(MIN.) = 0.93 Tc(MIN.) = 6.07
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.138

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 0.54 SUBAREA RUNOFF(CFS) = 2.50
 TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 3.71

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 8.57
 FLOW VELOCITY(FEET/SEC.) = 4.35 DEPTH*VELOCITY(FT*FT/SEC.) = 1.30
 LONGEST FLOWPATH FROM NODE 2214.00 TO NODE 2215.00 = 322.50 FEET.

FLOW PROCESS FROM NODE 2215.00 TO NODE 2215.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 6.07
 RAINFALL INTENSITY(INCH/HR) = 8.14
 TOTAL STREAM AREA(ACRES) = 0.80
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.71

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** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.85	8.27	6.663	2.97
2	5.38	4.61	9.222	0.97
3	3.71	6.07	8.138	0.80

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	14.80	4.61	9.222
2	17.14	6.07	8.138
3	18.77	8.27	6.663

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 18.77 Tc(MIN.) = 8.27

TOTAL AREA(ACRES) = 4.7

LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2215.00 = 830.00 FEET.

FLOW PROCESS FROM NODE 2215.00 TO NODE 2212.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1291.00 DOWNSTREAM(Feet) = 1287.00

FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.7 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 17.07

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 18.77

PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 8.32

LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2212.00 = 880.00 FEET.

FLOW PROCESS FROM NODE 2212.00 TO NODE 2219.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1287.00 DOWNSTREAM(Feet) = 1225.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 270.00 CHANNEL SLOPE = 0.2296

NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION

CHANNEL FLOW THRU SUBAREA(CFS) = 18.77

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FLOW VELOCITY(FEET/SEC) = 9.32 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 8.81
 LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2219.00 = 1150.00 FEET.

FLOW PROCESS FROM NODE 2219.00 TO NODE 2219.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.77	8.81	6.401	4.74

LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2219.00 = 1150.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	44.38	6.92	7.481	16.95

LONGEST FLOWPATH FROM NODE 2221.00 TO NODE 2219.00 = 870.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	59.12	6.92	7.481
2	56.74	8.81	6.401

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 59.12 Tc(MIN.) = 6.92
 TOTAL AREA(ACRES) = 21.7

FLOW PROCESS FROM NODE 2219.00 TO NODE 2219.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

=====

FLOW PROCESS FROM NODE 2219.00 TO NODE 2222.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1225.00 DOWNSTREAM(FEET) = 1115.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 500.00 CHANNEL SLOPE = 0.2200
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.015 MAXIMUM DEPTH(FEET) = 10.00

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.271
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 67.09
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 26.74
 AVERAGE FLOW DEPTH(FEET) = 0.60 TRAVEL TIME(MIN.) = 0.31
 Tc(MIN.) = 7.23
 SUBAREA AREA(ACRES) = 6.26 SUBAREA RUNOFF(CFS) = 15.93
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.388
 TOTAL AREA(ACRES) = 28.0 PEAK FLOW RATE(CFS) = 78.93

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.65 FLOW VELOCITY(FEET/SEC.) = 28.16
 LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2222.00 = 1650.00 FEET.

FLOW PROCESS FROM NODE 2222.00 TO NODE 2222.00 IS CODE = 11

 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	78.93	7.23	7.271	27.95

LONGEST FLOWPATH FROM NODE 2218.00 TO NODE 2222.00 = 1650.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	100.62	15.51	4.443	40.07

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2222.00 = 3430.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	125.82	7.23	7.271
2	148.85	15.51	4.443

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 148.85 Tc(MIN.) = 15.51
 TOTAL AREA(ACRES) = 68.0

FLOW PROCESS FROM NODE 2222.00 TO NODE 2222.00 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 1 <<<<<

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FLOW PROCESS FROM NODE 2222.00 TO NODE 2209.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1115.00 DOWNSTREAM(Feet) = 960.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 1140.00 CHANNEL SLOPE = 0.1360

CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.257

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 171.56

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 17.82

AVERAGE FLOW DEPTH(Feet) = 1.57 TRAVEL TIME(Min.) = 1.07

Tc(Min.) = 16.58

SUBAREA AREA(ACRES) = 30.46 SUBAREA RUNOFF(CFS) = 45.38

AREA-AVERAGE RUNOFF COEFFICIENT = 0.433

TOTAL AREA(ACRES) = 98.5 PEAK FLOW RATE(CFS) = 181.60

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 1.61 FLOW VELOCITY(Feet/Sec.) = 18.06

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2209.00 = 4570.00 FEET.

FLOW PROCESS FROM NODE 2209.00 TO NODE 2208.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 954.00 DOWNSTREAM(Feet) = 942.00

FLOW LENGTH(Feet) = 140.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 36.0 INCH PIPE IS 28.9 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 29.87

ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 181.60

PIPE TRAVEL TIME(Min.) = 0.08 Tc(Min.) = 16.65

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2208.80 = 4710.00 FEET.

FLOW PROCESS FROM NODE 2208.80 TO NODE 2208.80 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 16.65
 RAINFALL INTENSITY(INCH/HR) = 4.24
 TOTAL STREAM AREA(ACRES) = 98.48
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 181.60

FLOW PROCESS FROM NODE 2203.00 TO NODE 2202.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1210.00

DOWNSTREAM ELEVATION(FEET) = 1165.00

ELEVATION DIFFERENCE(FEET) = 45.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.50

TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 2202.00 TO NODE 2201.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1165.00 DOWNSTREAM(FEET) = 945.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 665.00 CHANNEL SLOPE = 0.3308

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.615

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.74

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.76

AVERAGE FLOW DEPTH(FEET) = 0.19 TRAVEL TIME(MIN.) = 1.27

Tc(MIN.) = 8.37

SUBAREA AREA(ACRES) = 6.32 SUBAREA RUNOFF(CFS) = 10.45

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 6.6 PEAK FLOW RATE(CFS) = 10.90

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

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DEPTH(FEET) = 0.28 FLOW VELOCITY(FEET/SEC.) = 10.96
 LONGEST FLOWPATH FROM NODE 2203.00 TO NODE 2201.00 = 765.00 FEET.

FLOW PROCESS FROM NODE 2201.00 TO NODE 2208.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 945.00 DOWNSTREAM(FEET) = 942.00
 FLOW LENGTH(FEET) = 225.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.41
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.90
 PIPE TRAVEL TIME(MIN.) = 0.51 Tc(MIN.) = 8.87
 LONGEST FLOWPATH FROM NODE 2203.00 TO NODE 2208.80 = 990.00 FEET.

FLOW PROCESS FROM NODE 2208.80 TO NODE 2208.80 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.87
 RAINFALL INTENSITY(INCH/HR) = 6.37
 TOTAL STREAM AREA(ACRES) = 6.59
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.90

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	181.60	16.65	4.244	98.48
2	10.90	8.87	6.369	6.59

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	107.67	8.87	6.369
2	188.87	16.65	4.244

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 188.87 Tc(MIN.) = 16.65

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TOTAL AREA(ACRES) = 105.1
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2208.80 = 4710.00 FEET.

FLOW PROCESS FROM NODE 2208.80 TO NODE 2208.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	942.00	DOWNSTREAM(FEET) =	924.00
FLOW LENGTH(FEET) =	110.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	33.0 INCH PIPE IS	25.2 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	38.81		
ESTIMATED PIPE DIAMETER(INCH) =	33.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	188.87		
PIPE TRAVEL TIME(MIN.) =	0.05	Tc(MIN.) =	16.70
LONGEST FLOWPATH FROM NODE	1372.00 TO NODE	2208.00 =	4820.00 FEET.

FLOW PROCESS FROM NODE 2208.00 TO NODE 2208.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM	1 ARE:
TIME OF CONCENTRATION(MIN.) =	16.70
RAINFALL INTENSITY(INCH/HR) =	4.24
TOTAL STREAM AREA(ACRES) =	105.07
PEAK FLOW RATE(CFS) AT CONFLUENCE =	188.87

FLOW PROCESS FROM NODE 2207.00 TO NODE 2206.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.3500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	100.00
UPSTREAM ELEVATION(FEET) =	1420.00
DOWNSTREAM ELEVATION(FEET) =	1385.00
ELEVATION DIFFERENCE(FEET) =	35.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!	
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.972
SUBAREA RUNOFF(CFS) =	1.23
TOTAL AREA(ACRES) =	0.44
TOTAL RUNOFF(CFS) =	1.23

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FLOW PROCESS FROM NODE 2206.00 TO NODE 2205.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1385.00 DOWNSTREAM(FEET) = 945.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1065.00 CHANNEL SLOPE = 0.4131
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.836

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.90
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 10.52
AVERAGE FLOW DEPTH(FEET) = 0.22 TRAVEL TIME(MIN.) = 1.69
Tc(MIN.) = 7.95
SUBAREA AREA(ACRES) = 5.54 SUBAREA RUNOFF(CFS) = 13.25
AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
TOTAL AREA(ACRES) = 6.0 PEAK FLOW RATE(CFS) = 14.31

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.31 FLOW VELOCITY(FEET/SEC.) = 12.84
LONGEST FLOWPATH FROM NODE 2207.00 TO NODE 2205.00 = 1165.00 FEET.

FLOW PROCESS FROM NODE 2205.00 TO NODE 2208.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 939.00 DOWNSTREAM(FEET) = 924.00
FLOW LENGTH(FEET) = 55.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 25.13
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 14.31
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 7.99
LONGEST FLOWPATH FROM NODE 2207.00 TO NODE 2208.00 = 1220.00 FEET.

FLOW PROCESS FROM NODE 2208.00 TO NODE 2208.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.99
 RAINFALL INTENSITY(INCH/HR) = 6.82
 TOTAL STREAM AREA(ACRES) = 5.98
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 14.31

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	188.87	16.70	4.236	105.07
2	14.31	7.99	6.816	5.98

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	131.69	7.99	6.816
2	197.76	16.70	4.236

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 197.76 Tc(MIN.) = 16.70
 TOTAL AREA(ACRES) = 111.1
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2208.00 = 4820.00 FEET.

FLOW PROCESS FROM NODE 2208.00 TO NODE 2201.10 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 924.00 DOWNSTREAM(FEET) = 910.00
 FLOW LENGTH(FEET) = 520.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 48.0 INCH PIPE IS 35.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 20.09
 ESTIMATED PIPE DIAMETER(INCH) = 48.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 197.76
 PIPE TRAVEL TIME(MIN.) = 0.43 Tc(MIN.) = 17.13
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2201.10 = 5340.00 FEET.

FLOW PROCESS FROM NODE 2201.10 TO NODE 2201.10 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

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CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 17.13
RAINFALL INTENSITY(INCH/HR) = 4.17
TOTAL STREAM AREA(ACRES) = 111.05
PEAK FLOW RATE(CFS) AT CONFLUENCE = 197.76

FLOW PROCESS FROM NODE 2201.20 TO NODE 2201.30 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1200.00
DOWNSTREAM ELEVATION(FEET) = 1160.00
ELEVATION DIFFERENCE(FEET) = 40.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.108
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.105
SUBAREA RUNOFF(CFS) = 0.54
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.54

FLOW PROCESS FROM NODE 2201.30 TO NODE 2201.40 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1160.00 DOWNSTREAM(FEET) = 943.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 600.00 CHANNEL SLOPE = 0.3617
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.422

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 10.78
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 11.20
AVERAGE FLOW DEPTH(FEET) = 0.27 TRAVEL TIME(MIN.) = 0.89
T_c(MIN.) = 7.00
SUBAREA AREA(ACRES) = 7.87 SUBAREA RUNOFF(CFS) = 20.44
AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
TOTAL AREA(ACRES) = 8.1 PEAK FLOW RATE(CFS) = 20.94

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.40 FLOW VELOCITY(FEET/SEC.) = 13.79

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LONGEST FLOWPATH FROM NODE 2201.20 TO NODE 2201.40 = 695.00 FEET.

FLOW PROCESS FROM NODE 2201.40 TO NODE 2201.10 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 937.00 DOWNSTREAM(FEET) = 910.00

FLOW LENGTH(FEET) = 165.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 23.03

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.94

PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 7.12

LONGEST FLOWPATH FROM NODE 2201.20 TO NODE 2201.10 = 860.00 FEET.

FLOW PROCESS FROM NODE 2201.10 TO NODE 2201.10 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 7.12

RAINFALL INTENSITY(INCH/HR) = 7.34

TOTAL STREAM AREA(ACRES) = 8.06

PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.94

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	197.76	17.13	4.167	111.05
2	20.94	7.12	7.341	8.06

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	133.19	7.12	7.341
2	209.64	17.13	4.167

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 209.64 Tc(MIN.) = 17.13

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TOTAL AREA(ACRES) = 119.1
 LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2201.10 = 5340.00 FEET.

FLOW PROCESS FROM NODE 2201.10 TO NODE 2200.90 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	910.00	DOWNSTREAM(FEET) =	908.00
FLOW LENGTH(FEET) =	180.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	57.0 INCH PIPE IS	43.2 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	14.55		
ESTIMATED PIPE DIAMETER(INCH) =	57.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	209.64		
PIPE TRAVEL TIME(MIN.) =	0.21	Tc(MIN.) =	17.34
LONGEST FLOWPATH FROM NODE	1372.00 TO NODE	2200.90 =	5520.00 FEET.

FLOW PROCESS FROM NODE 2200.90 TO NODE 2200.90 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM	1 ARE:
TIME OF CONCENTRATION(MIN.) =	17.34
RAINFALL INTENSITY(INCH/HR) =	4.14
TOTAL STREAM AREA(ACRES) =	119.11
PEAK FLOW RATE(CFS) AT CONFLUENCE =	209.64

FLOW PROCESS FROM NODE 2199.60 TO NODE 2199.50 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.3500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	100.00
UPSTREAM ELEVATION(FEET) =	1600.00
DOWNSTREAM ELEVATION(FEET) =	1584.00
ELEVATION DIFFERENCE(FEET) =	16.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!	
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.972
SUBAREA RUNOFF(CFS) =	0.39
TOTAL AREA(ACRES) =	0.14
TOTAL RUNOFF(CFS) =	0.39

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FLOW PROCESS FROM NODE 2199.50 TO NODE 2199.80 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1584.00 DOWNSTREAM(FEET) = 1118.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1000.00 CHANNEL SLOPE = 0.4660

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.228

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 26.34

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 16.21

AVERAGE FLOW DEPTH(FEET) = 0.42 TRAVEL TIME(MIN.) = 1.03

Tc(MIN.) = 7.29

SUBAREA AREA(ACRES) = 20.46 SUBAREA RUNOFF(CFS) = 51.76

AREA-AVERAGE RUNOFF COEFFICIENT = 0.350

TOTAL AREA(ACRES) = 20.6 PEAK FLOW RATE(CFS) = 52.11

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.62 FLOW VELOCITY(FEET/SEC.) = 20.03

LONGEST FLOWPATH FROM NODE 2199.60 TO NODE 2199.80 = 1100.00 FEET.

FLOW PROCESS FROM NODE 2199.80 TO NODE 2199.70 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1118.00 DOWNSTREAM(FEET) = 918.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1355.00 CHANNEL SLOPE = 0.1476

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.457

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3200

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 107.33

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 16.21

AVERAGE FLOW DEPTH(FEET) = 1.22 TRAVEL TIME(MIN.) = 1.39

Tc(MIN.) = 8.69

SUBAREA AREA(ACRES) = 53.29 SUBAREA RUNOFF(CFS) = 110.12

AREA-AVERAGE RUNOFF COEFFICIENT = 0.328

TOTAL AREA(ACRES) = 73.9 PEAK FLOW RATE(CFS) = 156.67

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.47 FLOW VELOCITY(FEET/SEC.) = 17.95

LONGEST FLOWPATH FROM NODE 2199.60 TO NODE 2199.70 = 2455.00 FEET.

FLOW PROCESS FROM NODE 2199.70 TO NODE 2200.90 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 912.00 DOWNSTREAM(FEET) = 908.00

FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 42.0 INCH PIPE IS 29.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 21.70

ESTIMATED PIPE DIAMETER(INCH) = 42.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 156.67

PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 8.77

LONGEST FLOWPATH FROM NODE 2199.60 TO NODE 2200.90 = 2560.00 FEET.

FLOW PROCESS FROM NODE 2200.90 TO NODE 2200.90 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 8.77

RAINFALL INTENSITY(INCH/HR) = 6.42

TOTAL STREAM AREA(ACRES) = 73.89

PEAK FLOW RATE(CFS) AT CONFLUENCE = 156.67

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	209.64	17.34	4.135	119.11
2	156.67	8.77	6.419	73.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	291.72	8.77	6.419
2	310.57	17.34	4.135

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

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PEAK FLOW RATE(CFS) = 310.57 Tc(MIN.) = 17.34

TOTAL AREA(ACRES) = 193.0

LONGEST FLOWPATH FROM NODE 1372.00 TO NODE 2200.90 = 5520.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 193.0 TC(MIN.) = 17.34

PEAK FLOW RATE(CFS) = 310.57

=====

END OF RATIONAL METHOD ANALYSIS





Newland Sierra

Job #: 2660-02

Date:
2/16/2017

Run Name:
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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2494	2493	2	1294	1292	80	0.57	0.13				
2493	2272	6	1294	1284.5	245	0.57	0.93	1 side			
2272	2272	1						1 of 2			
2280	2279	2	1287	1286	65	0.51	0.11				
2279	2278	6	1286	1285	145	0.51	0.62	2 SIDES			
2278	2272	3	1279	1278.5	55						
2272	2272	1						2 of 2			
2272	2277	3	1278.5	1269	280						
2277	2277	1						1 of 3			
2272.8	2272.6	2	1286	1284	81	0.51	0.12				
2272.6	2277	6	1284	1275	225	0.51	1.11	1 side			
2277	2277	1						2 of 3			
2276	2275	2	1284	1282	85	0.51	0.05				
2275	2274	6	1282	1278	180	0.51	0.98				
2274	2277	3	1272	1269	100						
2277	2277	1						3 of 3			
2277	2271	3	1269	1259	440						
2271	2271	1						1 of 2			
2271.2	2271.3	2	1272	1271	65	0.51	0.12				
2271.3	2271.4	6	1271	1265	210	0.51	0.65	2 SIDES			
2271.4	2271	3	1259	1258	50						
2271	2271	1						2 OF 2			
2271	2271	10						Save to Bank 1			
2250.2	2241	2	1300	1295	90	0.57	0.10				
2241	2240	6	1295	1284	525	0.54	1.78	2 sides			
2240	2236	3	1278	1277	690						
2236	2236	1						1 of 2			
2238	2237	2	1295	1292	95	0.51	0.15				
2237	2236	6	1292	1283	295	0.51	1.09	2 sides			
2236	2236	1						2 of 2			
2236	2235	3	1277	1276	240						
2235	2235	1						1 of 2			
2234	2233	2	1284	1283	65	0.51	0.11				
2233	2235	6	1283	1282	95	0.51	0.55	2 SIDES			



Newland Sierra

Job #: 2660-02

Date:
2/16/2017

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2235	2235	1						2 of 2			
2235	2232	3	1276	1274	55						
2232	2232	1						1 of 2			
2227	2226	2	1296	1295	65	0.57	0.11				
2226	2232	6	1295	1274	495	0.57	2.70	1 side			
2232	2232	1						2 of 2			
2232	2268.8	3	1274	1267	245						
2268.8	2268.8	1						1 of 2			
2270	2269	2	1278	1276	83.33	0.51	0.10				
2269	2268	6	1276	1275	110	0.51	0.77	2 SIDES			
2268	2268.8	3	1269	1267	105						
2268.8	2268.8	1						2 of 2			
2268.8	2267	3	1267	1262	165						
2267	2267	1						1 of 3			
2266	2265	2	1280	1275	85	0.51	0.13				
2265	2267	6	1275	1270	350	0.51	1.26	1 side			
2267	2267	1						2 of 3			
2264	2263	2	1274	1272	81.58	0.51	0.10				
2263	2262	6	1272	1271	125	0.51	0.35	1 SIDE			
2262	2267	3	1265	1264	65						
2267	2267	1						3 of 3			
2267	2271	3	1264	1258	280						
2271	2271	11						Add Bank 1			
2271	2271	12						Clear Bank 1			
2271	2261	3	1258	1257.5	10						
2261	2261	1						1 of 3			
2260	2259	2	1278	1276	80	0.51	0.13				
2259	2261	6	1276	1263.5	370	0.51	1.67	1 side			
2261	2261	1						2 of 3			
2258	2257	2	1271	1269	80	0.51	0.14				
2257	2261	6	1269	1263.5	250	0.51	0.89	1 side			
2261	2261	1						3 of 3			
2261	2256	3	1257.5	1244	170						

[illegible]

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

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***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY - SUBBASIN 25 *
* RESULTS ARE TO BE ENTERED INTO RUN 25.1 AS A CODE 7 AT NODE 2281 *
* *

FILE NAME: P-25-2.DAT

TIME/DATE OF STUDY: 10:05 02/15/2017

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

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FLOW PROCESS FROM NODE 2494.00 TO NODE 2493.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
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*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1294.00

DOWNSTREAM ELEVATION(FEET) = 1292.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.287

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.955

SUBAREA RUNOFF(CFS) = 0.59

TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.59

FLOW PROCESS FROM NODE 2493.00 TO NODE 2272.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<
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UPSTREAM ELEVATION(FEET) = 1292.00 DOWNSTREAM ELEVATION(FEET) = 1284.50

STREET LENGTH(FEET) = 245.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.48

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.28

HALFSTREET FLOOD WIDTH(FEET) = 7.78

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.43

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.97

STREET FLOW TRAVEL TIME(MIN.) = 1.19 Tc(MIN.) = 7.48

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.114

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

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AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 0.93 SUBAREA RUNOFF(CFS) = 3.77
 TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 4.30

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.90
 FLOW VELOCITY(FEET/SEC.) = 3.91 DEPTH*VELOCITY(FT*FT/SEC.) = 1.27
 LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2272.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2272.00 TO NODE 2272.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.48
 RAINFALL INTENSITY(INCH/HR) = 7.11
 TOTAL STREAM AREA(ACRES) = 1.06
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.30

FLOW PROCESS FROM NODE 2280.00 TO NODE 2279.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
 UPSTREAM ELEVATION(FEET) = 1287.00
 DOWNSTREAM ELEVATION(FEET) = 1286.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
 SUBAREA RUNOFF(CFS) = 0.40
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.40

FLOW PROCESS FROM NODE 2279.00 TO NODE 2278.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

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UPSTREAM ELEVATION(FEET) = 1286.00 DOWNSTREAM ELEVATION(FEET) = 1285.00
 STREET LENGTH(FEET) = 145.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.40
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.25
 HALFSTREET FLOOD WIDTH(FEET) = 5.98
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.47
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.36
 STREET FLOW TRAVEL TIME(MIN.) = 1.65 Tc(MIN.) = 9.06
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.283
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.62 SUBAREA RUNOFF(CFS) = 1.99
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.34

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.71
 FLOW VELOCITY(FEET/SEC.) = 1.64 DEPTH*VELOCITY(FT*FT/SEC.) = 0.46
 LONGEST FLOWPATH FROM NODE 2280.00 TO NODE 2278.00 = 210.00 FEET.

FLOW PROCESS FROM NODE 2278.00 TO NODE 2272.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1279.00 DOWNSTREAM(FEET) = 1278.50
 FLOW LENGTH(FEET) = 55.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.45
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.34
 PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 9.27
 LONGEST FLOWPATH FROM NODE 2280.00 TO NODE 2272.00 = 265.00 FEET.

FLOW PROCESS FROM NODE 2272.00 TO NODE 2272.00 IS CODE = 1

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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.27
RAINFALL INTENSITY(INCH/HR) = 6.19
TOTAL STREAM AREA(ACRES) = 0.73
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.34
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** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.30	7.48	7.114	1.06
2	2.34	9.27	6.193	0.73

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	6.19	7.48	7.114
2	6.08	9.27	6.193

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 6.19 Tc(MIN.) = 7.48
TOTAL AREA(ACRES) = 1.8
LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2272.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2272.00 TO NODE 2277.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
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ELEVATION DATA: UPSTREAM(FEET) = 1278.50 DOWNSTREAM(FEET) = 1269.00
FLOW LENGTH(FEET) = 280.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.37
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.19
PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 7.98
LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2277.00 = 605.00 FEET.
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FLOW PROCESS FROM NODE 2277.00 TO NODE 2277.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 7.98
RAINFALL INTENSITY(INCH/HR) = 6.82
TOTAL STREAM AREA(ACRES) = 1.79
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.19

FLOW PROCESS FROM NODE 2272.80 TO NODE 2272.60 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.00
UPSTREAM ELEVATION(FEET) = 1286.00
DOWNSTREAM ELEVATION(FEET) = 1284.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.072
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.374
SUBAREA RUNOFF(CFS) = 0.45
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.45

FLOW PROCESS FROM NODE 2272.60 TO NODE 2277.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1284.00 DOWNSTREAM ELEVATION(FEET) = 1275.00
STREET LENGTH(FEET) = 225.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.37
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

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STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.11
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.80
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.02
STREET FLOW TRAVEL TIME(MIN.) = 0.99 Tc(MIN.) = 8.06
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.778
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 1.11 SUBAREA RUNOFF(CFS) = 3.84
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 4.25

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.30
FLOW VELOCITY(FEET/SEC.) = 4.32 DEPTH*VELOCITY(FT*FT/SEC.) = 1.35
LONGEST FLOWPATH FROM NODE 2272.80 TO NODE 2277.00 = 306.00 FEET.

FLOW PROCESS FROM NODE 2277.00 TO NODE 2277.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.06
RAINFALL INTENSITY(INCH/HR) = 6.78
TOTAL STREAM AREA(ACRES) = 1.23
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.25

FLOW PROCESS FROM NODE 2276.00 TO NODE 2275.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
UPSTREAM ELEVATION(FEET) = 1284.00
DOWNSTREAM ELEVATION(FEET) = 1282.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.362
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.185
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.18

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FLOW PROCESS FROM NODE 2275.00 TO NODE 2274.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1282.00 DOWNSTREAM ELEVATION(FEET) = 1278.00
STREET LENGTH(FEET) = 180.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.83
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.24
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.85
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.77
STREET FLOW TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 8.41
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.592
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.98 SUBAREA RUNOFF(CFS) = 3.29
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.46

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.70
FLOW VELOCITY(FEET/SEC.) = 3.27 DEPTH*VELOCITY(FT*FT/SEC.) = 1.05
LONGEST FLOWPATH FROM NODE 2276.00 TO NODE 2274.00 = 265.00 FEET.

FLOW PROCESS FROM NODE 2274.00 TO NODE 2277.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1272.00 DOWNSTREAM(FEET) = 1269.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 7.63
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.46
 PIPE TRAVEL TIME(MIN.) = 0.22 Tc(MIN.) = 8.63
 LONGEST FLOWPATH FROM NODE 2276.00 TO NODE 2277.00 = 365.00 FEET.

FLOW PROCESS FROM NODE 2277.00 TO NODE 2277.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.63
 RAINFALL INTENSITY(INCH/HR) = 6.48
 TOTAL STREAM AREA(ACRES) = 1.03
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.46

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.19	7.98	6.824	1.79
2	4.25	8.06	6.778	1.23
3	3.46	8.63	6.484	1.03

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	13.59	7.98	6.824
2	13.63	8.06	6.778
3	13.41	8.63	6.484

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 13.63 Tc(MIN.) = 8.06
 TOTAL AREA(ACRES) = 4.1
 LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2277.00 = 605.00 FEET.

FLOW PROCESS FROM NODE 2277.00 TO NODE 2271.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1269.00 DOWNSTREAM(FEET) = 1259.00

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FLOW LENGTH(FEET) = 440.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.63
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 13.63
PIPE TRAVEL TIME(MIN.) = 0.76 Tc(MIN.) = 8.82
LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2271.00 = 1045.00 FEET.

FLOW PROCESS FROM NODE 2271.00 TO NODE 2271.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.82
RAINFALL INTENSITY(INCH/HR) = 6.39
TOTAL STREAM AREA(ACRES) = 4.05
PEAK FLOW RATE(CFS) AT CONFLUENCE = 13.63

FLOW PROCESS FROM NODE 2271.20 TO NODE 2271.30 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1272.00
DOWNSTREAM ELEVATION(FEET) = 1271.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
SUBAREA RUNOFF(CFS) = 0.44
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.44

FLOW PROCESS FROM NODE 2271.30 TO NODE 2271.40 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1271.00 DOWNSTREAM ELEVATION(FEET) = 1265.00
STREET LENGTH(FEET) = 210.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

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INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.51

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.21

HALFSTREET FLOOD WIDTH(FEET) = 3.99

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.72

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.56

STREET FLOW TRAVEL TIME(MIN.) = 1.29 Tc(MIN.) = 8.70

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.449

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(ACRES) = 0.65 SUBAREA RUNOFF(CFS) = 2.14

TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 2.53

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.24 HALFSTREET FLOOD WIDTH(FEET) = 5.58

FLOW VELOCITY(FEET/SEC.) = 2.95 DEPTH*VELOCITY(FT*FT/SEC.) = 0.70

LONGEST FLOWPATH FROM NODE 2271.20 TO NODE 2271.40 = 275.00 FEET.

FLOW PROCESS FROM NODE 2271.40 TO NODE 2271.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1258.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 6.04

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 2.53

PIPE TRAVEL TIME(MIN.) = 0.14 Tc(MIN.) = 8.84

LONGEST FLOWPATH FROM NODE 2271.20 TO NODE 2271.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2271.00 TO NODE 2271.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.84
RAINFALL INTENSITY(INCH/HR) = 6.38
TOTAL STREAM AREA(ACRES) = 0.77
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.53
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	13.63	8.82	6.395	4.05
2	2.53	8.84	6.384	0.77

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.15	8.82	6.395
2	16.14	8.84	6.384

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 16.15 Tc(MIN.) = 8.82
TOTAL AREA(ACRES) = 4.8
LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2271.00 = 1045.00 FEET.
```

```
FLOW PROCESS FROM NODE 2271.00 TO NODE 2271.00 IS CODE = 10
```

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

```
FLOW PROCESS FROM NODE 2242.00 TO NODE 2241.00 IS CODE = 21
```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1300.00
DOWNSTREAM ELEVATION(FEET) = 1295.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.110
```

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.093
 SUBAREA RUNOFF(CFS) = 0.52
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.52

FLOW PROCESS FROM NODE 2241.00 TO NODE 2240.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1295.00 DOWNSTREAM ELEVATION(FEET) = 1284.00
 STREET LENGTH(FEET) = 525.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.79
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.28
 HALFSTREET FLOOD WIDTH(FEET) = 7.44
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.82
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.77
 STREET FLOW TRAVEL TIME(MIN.) = 3.11 Tc(MIN.) = 8.22
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.693
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5400
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.542
 SUBAREA AREA(ACRES) = 1.78 SUBAREA RUNOFF(CFS) = 6.43
 TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 6.82

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.70
 FLOW VELOCITY(FEET/SEC.) = 3.22 DEPTH*VELOCITY(FT*FT/SEC.) = 1.03
 LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2240.00 = 615.00 FEET.

FLOW PROCESS FROM NODE 2240.00 TO NODE 2236.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1278.00  DOWNSTREAM(FEET) = 1277.00
FLOW LENGTH(FEET) = 690.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 2.91
ESTIMATED PIPE DIAMETER(INCH) = 24.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.82
PIPE TRAVEL TIME(MIN.) = 3.95  Tc(MIN.) = 12.17
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2236.00 = 1305.00 FEET.

*****
FLOW PROCESS FROM NODE 2236.00 TO NODE 2236.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.17
RAINFALL INTENSITY(INCH/HR) = 5.20
TOTAL STREAM AREA(ACRES) = 1.88
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.82

*****
FLOW PROCESS FROM NODE 2238.00 TO NODE 2237.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1295.00
DOWNSTREAM ELEVATION(FEET) = 1292.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.056
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.385
SUBAREA RUNOFF(CFS) = 0.56
TOTAL AREA(ACRES) = 0.15  TOTAL RUNOFF(CFS) = 0.56

*****
FLOW PROCESS FROM NODE 2237.00 TO NODE 2236.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1292.00  DOWNSTREAM ELEVATION(FEET) = 1283.00
STREET LENGTH(FEET) = 295.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.36
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.25
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.00
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.69
 STREET FLOW TRAVEL TIME(MIN.) = 1.64 Tc(MIN.) = 8.70
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.453
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 1.09 SUBAREA RUNOFF(CFS) = 3.59
 TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 4.08

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.04
 FLOW VELOCITY(FEET/SEC.) = 3.32 DEPTH*VELOCITY(FT*FT/SEC.) = 0.89
 LONGEST FLOWPATH FROM NODE 2238.00 TO NODE 2236.00 = 390.00 FEET.

FLOW PROCESS FROM NODE 2236.00 TO NODE 2236.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.70
 RAINFALL INTENSITY(INCH/HR) = 6.45
 TOTAL STREAM AREA(ACRES) = 1.24
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.08

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.82	12.17	5.196	1.88
2	4.08	8.70	6.453	1.24

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	8.95	8.70	6.453
2	10.10	12.17	5.196

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.10 T_c(MIN.) = 12.17

TOTAL AREA(ACRES) = 3.1

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2236.00 = 1305.00 FEET.

FLOW PROCESS FROM NODE 2236.00 TO NODE 2235.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1277.00 DOWNSTREAM(FEET) = 1276.00

FLOW LENGTH(FEET) = 240.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 4.81

ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 10.10

PIPE TRAVEL TIME(MIN.) = 0.83 T_c(MIN.) = 13.00

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2235.00 = 1545.00 FEET.

FLOW PROCESS FROM NODE 2235.00 TO NODE 2235.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 13.00

RAINFALL INTENSITY(INCH/HR) = 4.98

TOTAL STREAM AREA(ACRES) = 3.12

PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.10

FLOW PROCESS FROM NODE 2234.00 TO NODE 2233.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
 UPSTREAM ELEVATION(FEET) = 1284.00
 DOWNSTREAM ELEVATION(FEET) = 1283.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
 SUBAREA RUNOFF(CFS) = 0.40
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.40

FLOW PROCESS FROM NODE 2233.00 TO NODE 2235.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1283.00 DOWNSTREAM ELEVATION(FEET) = 1282.00
 STREET LENGTH(FEET) = 95.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.33
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.12
 AVERAGE FLOW VELOCITY(FT/SEC.) = 1.75
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.40
 STREET FLOW TRAVEL TIME(MIN.) = 0.90 Tc(MIN.) = 8.32
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.640

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.55 SUBAREA RUNOFF(CFS) = 1.86
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.23

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 6.85
 FLOW VELOCITY(FT/SEC.) = 1.90 DEPTH*VELOCITY(FT*FT/SEC.) = 0.50

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LONGEST FLOWPATH FROM NODE 2234.00 TO NODE 2235.00 = 160.00 FEET.

FLOW PROCESS FROM NODE 2235.00 TO NODE 2235.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 8.32

RAINFALL INTENSITY(INCH/HR) = 6.64

TOTAL STREAM AREA(ACRES) = 0.66

PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.23

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.10	13.00	4.979	3.12
2	2.23	8.32	6.640	0.66

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.81	8.32	6.640
2	11.78	13.00	4.979

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.78 Tc(MIN.) = 13.00

TOTAL AREA(ACRES) = 3.8

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2235.00 = 1545.00 FEET.

FLOW PROCESS FROM NODE 2235.00 TO NODE 2232.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1276.00 DOWNSTREAM(Feet) = 1274.00

FLOW LENGTH(Feet) = 55.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 11.33

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.78

PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 13.08

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LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2232.00 = 1600.00 FEET.

FLOW PROCESS FROM NODE 2232.00 TO NODE 2232.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.08
RAINFALL INTENSITY(INCH/HR) = 4.96
TOTAL STREAM AREA(ACRES) = 3.78
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.78

FLOW PROCESS FROM NODE 2227.00 TO NODE 2226.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1296.00
DOWNSTREAM ELEVATION(FEET) = 1295.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.663
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.663
SUBAREA RUNOFF(CFS) = 0.48
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.48

FLOW PROCESS FROM NODE 2226.00 TO NODE 2232.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1295.00 DOWNSTREAM ELEVATION(FEET) = 1274.00
STREET LENGTH(FEET) = 495.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

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Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.58
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.33
 HALFSTREET FLOOD WIDTH(FEET) = 10.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.69
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.56
 STREET FLOW TRAVEL TIME(MIN.) = 1.76 Tc(MIN.) = 8.42
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.589
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 2.70 SUBAREA RUNOFF(CFS) = 10.14
 TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 10.55

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.40 HALFSTREET FLOOD WIDTH(FEET) = 13.47
 FLOW VELOCITY(FEET/SEC.) = 5.46 DEPTH*VELOCITY(FT*FT/SEC.) = 2.16
 LONGEST FLOWPATH FROM NODE 2227.00 TO NODE 2232.00 = 560.00 FEET.

FLOW PROCESS FROM NODE 2232.00 TO NODE 2232.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.42
 RAINFALL INTENSITY(INCH/HR) = 6.59
 TOTAL STREAM AREA(ACRES) = 2.81
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.55

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.78	13.08	4.959	3.78
2	10.55	8.42	6.589	2.81

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.42	8.42	6.589

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2 19.72 13.08 4.959

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 19.72 Tc(MIN.) = 13.08

TOTAL AREA(ACRES) = 6.6

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2232.00 = 1600.00 FEET.

FLOW PROCESS FROM NODE 2232.00 TO NODE 2268.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1274.00 DOWNSTREAM(FEET) = 1267.00

FLOW LENGTH(FEET) = 245.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 11.67

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 19.72

PIPE TRAVEL TIME(MIN.) = 0.35 Tc(MIN.) = 13.43

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2268.80 = 1845.00 FEET.

FLOW PROCESS FROM NODE 2268.80 TO NODE 2268.80 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 13.43

RAINFALL INTENSITY(INCH/HR) = 4.88

TOTAL STREAM AREA(ACRES) = 6.59

PEAK FLOW RATE(CFS) AT CONFLUENCE = 19.72

FLOW PROCESS FROM NODE 2270.00 TO NODE 2269.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.33

UPSTREAM ELEVATION(FEET) = 1278.00

DOWNSTREAM ELEVATION(FEET) = 1276.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.241

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.262

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SUBAREA RUNOFF(CFS) = 0.37
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.37

FLOW PROCESS FROM NODE 2269.00 TO NODE 2268.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1275.00
STREET LENGTH(FEET) = 110.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.68
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.25
HALFSTREET FLOOD WIDTH(FEET) = 6.12
AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.70
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.42
STREET FLOW TRAVEL TIME(MIN.) = 1.08 Tc(MIN.) = 8.32
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.641
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.77 SUBAREA RUNOFF(CFS) = 2.61
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 2.95

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.04
FLOW VELOCITY(FEET/SEC.) = 1.93 DEPTH*VELOCITY(FT*FT/SEC.) = 0.55
LONGEST FLOWPATH FROM NODE 2270.00 TO NODE 2268.00 = 193.33 FEET.

FLOW PROCESS FROM NODE 2268.00 TO NODE 2268.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

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ELEVATION DATA: UPSTREAM(FEET) = 1269.00 DOWNSTREAM(FEET) = 1267.00
 FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.19
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.95
 PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 8.60
 LONGEST FLOWPATH FROM NODE 2270.00 TO NODE 2268.80 = 298.33 FEET.

FLOW PROCESS FROM NODE 2268.80 TO NODE 2268.80 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.60
 RAINFALL INTENSITY(INCH/HR) = 6.50
 TOTAL STREAM AREA(ACRES) = 0.87
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.95

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	19.72	13.43	4.875	6.59
2	2.95	8.60	6.500	0.87

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	17.74	8.60	6.500
2	21.93	13.43	4.875

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.93 Tc(MIN.) = 13.43
 TOTAL AREA(ACRES) = 7.5
 LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2268.80 = 1845.00 FEET.

FLOW PROCESS FROM NODE 2268.80 TO NODE 2267.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1267.00  DOWNSTREAM(FEET) = 1262.00
FLOW LENGTH(FEET) = 165.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.18
ESTIMATED PIPE DIAMETER(INCH) = 21.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 21.93
PIPE TRAVEL TIME(MIN.) = 0.23  Tc(MIN.) = 13.66
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2267.00 = 2010.00 FEET.

*****
FLOW PROCESS FROM NODE 2267.00 TO NODE 2267.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.66
RAINFALL INTENSITY(INCH/HR) = 4.82
TOTAL STREAM AREA(ACRES) = 7.46
PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.93

*****
FLOW PROCESS FROM NODE 1280.00 TO NODE 1275.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
UPSTREAM ELEVATION(FEET) = 1280.00
DOWNSTREAM ELEVATION(FEET) = 1275.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.424
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.750
SUBAREA RUNOFF(CFS) = 0.58
TOTAL AREA(ACRES) = 0.13  TOTAL RUNOFF(CFS) = 0.58

*****
FLOW PROCESS FROM NODE 2265.00 TO NODE 2267.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1275.00  DOWNSTREAM ELEVATION(FEET) = 1270.00
STREET LENGTH(FEET) = 350.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.85
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FT) = 0.32
 HALFSTREET FLOOD WIDTH(FT) = 9.77
 AVERAGE FLOW VELOCITY(FT/SEC.) = 2.66
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86
 STREET FLOW TRAVEL TIME(MIN.) = 2.19 Tc(MIN.) = 7.62
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.030
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 1.26 SUBAREA RUNOFF(CFS) = 4.52
 TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 4.98

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FT) = 0.37 HALFSTREET FLOOD WIDTH(FT) = 12.34
 FLOW VELOCITY(FT/SEC.) = 3.04 DEPTH*VELOCITY(FT*FT/SEC.) = 1.13
 LONGEST FLOWPATH FROM NODE 1280.00 TO NODE 2267.00 = 435.00 FEET.

FLOW PROCESS FROM NODE 2267.00 TO NODE 2267.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.62
 RAINFALL INTENSITY(INCH/HR) = 7.03
 TOTAL STREAM AREA(ACRES) = 1.39
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.98

FLOW PROCESS FROM NODE 2264.00 TO NODE 2263.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58
 UPSTREAM ELEVATION(FEET) = 1274.00
 DOWNSTREAM ELEVATION(FEET) = 1272.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.114
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.346
 SUBAREA RUNOFF(CFS) = 0.37
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.37

FLOW PROCESS FROM NODE 2263.00 TO NODE 2262.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1272.00 DOWNSTREAM ELEVATION(FEET) = 1271.00
 STREET LENGTH(FEET) = 125.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.97
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.26
 HALFSTREET FLOOD WIDTH(FEET) = 6.78
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.67
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.44
 STREET FLOW TRAVEL TIME(MIN.) = 1.25 Tc(MIN.) = 8.36
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.620

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.35 SUBAREA RUNOFF(CFS) = 1.18
 TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 1.52

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 8.44
 FLOW VELOCITY(FEET/SEC.) = 1.83 DEPTH*VELOCITY(FT*FT/SEC.) = 0.54

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LONGEST FLOWPATH FROM NODE 2264.00 TO NODE 2262.00 = 206.58 FEET.

FLOW PROCESS FROM NODE 2262.00 TO NODE 2267.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1265.00 DOWNSTREAM(FEET) = 1264.00

FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 4.74

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 1.52

PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 8.59

LONGEST FLOWPATH FROM NODE 2264.00 TO NODE 2267.00 = 271.58 FEET.

FLOW PROCESS FROM NODE 2267.00 TO NODE 2267.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:

TIME OF CONCENTRATION(MIN.) = 8.59

RAINFALL INTENSITY(INCH/HR) = 6.51

TOTAL STREAM AREA(ACRES) = 0.45

PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.52

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.93	13.66	4.823	7.46
2	4.98	7.62	7.030	1.39
3	1.52	8.59	6.505	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	21.38	7.62	7.030
2	22.39	8.59	6.505
3	26.48	13.66	4.823

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.48 Tc(MIN.) = 13.66

TOTAL AREA(ACRES) = 9.3

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2267.00 = 2010.00 FEET.

FLOW PROCESS FROM NODE 2267.00 TO NODE 2271.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1258.00

FLOW LENGTH(FEET) = 280.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 11.21

ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 26.48

PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 14.07

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2271.00 = 2290.00 FEET.

FLOW PROCESS FROM NODE 2271.00 TO NODE 2271.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.48	14.07	4.731	9.30

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2271.00 = 2290.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.15	8.82	6.395	4.82

LONGEST FLOWPATH FROM NODE 2494.00 TO NODE 2271.00 = 1045.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.75	8.82	6.395
2	38.43	14.07	4.731

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 38.43 Tc(MIN.) = 14.07

TOTAL AREA(ACRES) = 14.1

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FLOW PROCESS FROM NODE 2271.00 TO NODE 2271.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 2271.00 TO NODE 2261.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1258.00 DOWNSTREAM(FEET) = 1257.50
FLOW LENGTH(FEET) = 10.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.97
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 38.43
PIPE TRAVEL TIME(MIN.) = 0.01 Tc(MIN.) = 14.08
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2261.00 = 2300.00 FEET.

FLOW PROCESS FROM NODE 2261.00 TO NODE 2261.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.08
RAINFALL INTENSITY(INCH/HR) = 4.73
TOTAL STREAM AREA(ACRES) = 14.12
PEAK FLOW RATE(CFS) AT CONFLUENCE = 38.43

FLOW PROCESS FROM NODE 2260.00 TO NODE 2259.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1278.00
DOWNSTREAM ELEVATION(FEET) = 1276.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.49

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TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.49

FLOW PROCESS FROM NODE 2259.00 TO NODE 2261.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1276.00 DOWNSTREAM ELEVATION(FEET) = 1263.50
STREET LENGTH(FEET) = 370.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.26
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 8.57
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.83
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.14
STREET FLOW TRAVEL TIME(MIN.) = 1.61 Tc(MIN.) = 8.61
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.495
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 1.67 SUBAREA RUNOFF(CFS) = 5.53
TOTAL AREA(ACRES) = 1.8 PEAK FLOW RATE(CFS) = 5.96

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 11.16
FLOW VELOCITY(FEET/SEC.) = 4.38 DEPTH*VELOCITY(FT*FT/SEC.) = 1.53
LONGEST FLOWPATH FROM NODE 2260.00 TO NODE 2261.00 = 450.00 FEET.

FLOW PROCESS FROM NODE 2261.00 TO NODE 2261.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

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TIME OF CONCENTRATION(MIN.) = 8.61
RAINFALL INTENSITY(INCH/HR) = 6.49
TOTAL STREAM AREA(ACRES) = 1.80
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.96

FLOW PROCESS FROM NODE 2258.00 TO NODE 2257.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1271.00
DOWNSTREAM ELEVATION(FEET) = 1269.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.53
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2257.00 TO NODE 2261.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1269.00 DOWNSTREAM ELEVATION(FEET) = 1263.50
STREET LENGTH(FEET) = 250.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.03
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.64
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.89
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.81
STREET FLOW TRAVEL TIME(MIN.) = 1.44 Tc(MIN.) = 8.44

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.578
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.89 SUBAREA RUNOFF(CFS) = 2.99
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.46

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.70
 FLOW VELOCITY(FEET/SEC.) = 3.26 DEPTH*VELOCITY(FT*FT/SEC.) = 1.04
 LONGEST FLOWPATH FROM NODE 2258.00 TO NODE 2261.00 = 330.00 FEET.

FLOW PROCESS FROM NODE 2261.00 TO NODE 2261.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.44
 RAINFALL INTENSITY(INCH/HR) = 6.58
 TOTAL STREAM AREA(ACRES) = 1.03
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.46

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	38.43	14.08	4.729	14.12
2	5.96	8.61	6.495	1.80
3	3.46	8.44	6.578	1.03

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.34	8.44	6.578
2	32.87	8.61	6.495
3	45.25	14.08	4.729

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 45.25 Tc(MIN.) = 14.08
 TOTAL AREA(ACRES) = 17.0
 LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2261.00 = 2300.00 FEET.

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FLOW PROCESS FROM NODE 2261.00 TO NODE 2256.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1257.50 DOWNSTREAM(FEET) = 1244.00
 FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 21.12
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 45.25
 PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 14.22
 LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2256.00 = 2470.00 FEET.

FLOW PROCESS FROM NODE 2256.00 TO NODE 2256.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 14.22
 RAINFALL INTENSITY(INCH/HR) = 4.70
 TOTAL STREAM AREA(ACRES) = 16.95
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 45.25

FLOW PROCESS FROM NODE 2255.00 TO NODE 2254.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
 UPSTREAM ELEVATION(FEET) = 1275.00
 DOWNSTREAM ELEVATION(FEET) = 1274.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
 SUBAREA RUNOFF(CFS) = 0.73
 TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 0.73

FLOW PROCESS FROM NODE 2254.00 TO NODE 2253.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1274.00  DOWNSTREAM ELEVATION(FEET) = 1267.00
STREET LENGTH(FEET) = 295.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.59
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 6.65
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.84
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.74
STREET FLOW TRAVEL TIME(MIN.) = 1.73  Tc(MIN.) = 9.15
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.246
```

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.54  SUBAREA RUNOFF(CFS) = 1.72
TOTAL AREA(ACRES) = 0.7  PEAK FLOW RATE(CFS) = 2.36
```

END OF SUBAREA STREET FLOW HYDRAULICS:

```
DEPTH(FEET) = 0.29  HALFSTREET FLOOD WIDTH(FEET) = 8.04
FLOW VELOCITY(FEET/SEC.) = 3.08  DEPTH*VELOCITY(FT*FT/SEC.) = 0.88
LONGEST FLOWPATH FROM NODE 2255.00 TO NODE 2253.00 = 360.00 FEET.
```

FLOW PROCESS FROM NODE 2253.00 TO NODE 2256.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1261.00  DOWNSTREAM(FEET) = 1244.00
FLOW LENGTH(FEET) = 340.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.20
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.36
```

```

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PIPE TRAVEL TIME(MIN.) =    0.69    Tc(MIN.) =    9.84
LONGEST FLOWPATH FROM NODE    2255.00 TO NODE    2256.00 =    700.00 FEET.

*****
FLOW PROCESS FROM NODE    2256.00 TO NODE    2256.00 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS =    2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM    2 ARE:
TIME OF CONCENTRATION(MIN.) =    9.84
RAINFALL INTENSITY(INCH/HR) =    5.96
TOTAL STREAM AREA(ACRES) =    0.74
PEAK FLOW RATE(CFS) AT CONFLUENCE =    2.36

** CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER      (CFS)      (MIN.)  (INCH/ HOUR)  (ACRE)
    1         45.25      14.22      4.700      16.95
    2         2.36       9.84       5.960       0.74

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR    2 STREAMS.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF      Tc      INTENSITY
NUMBER      (CFS)      (MIN.)  (INCH/ HOUR)
    1        38.04       9.84       5.960
    2        47.11      14.22       4.700

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) =    47.11    Tc(MIN.) =    14.22
TOTAL AREA(ACRES) =    17.7
LONGEST FLOWPATH FROM NODE    2242.00 TO NODE    2256.00 =    2470.00 FEET.

*****
FLOW PROCESS FROM NODE    2256.00 TO NODE    2252.00 IS CODE =    31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1244.00 DOWNSTREAM(FEET) = 1243.00
FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 25.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.96
ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 47.11

```

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PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 14.45
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2252.00 = 2595.00 FEET.

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.45
RAINFALL INTENSITY(INCH/HR) = 4.65
TOTAL STREAM AREA(ACRES) = 17.69
PEAK FLOW RATE(CFS) AT CONFLUENCE = 47.11

FLOW PROCESS FROM NODE 2251.00 TO NODE 2250.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1266.00
DOWNSTREAM ELEVATION(FEET) = 1261.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.951
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.242
SUBAREA RUNOFF(CFS) = 0.76
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.76

FLOW PROCESS FROM NODE 2250.00 TO NODE 2252.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1261.00 DOWNSTREAM ELEVATION(FEET) = 1249.00
STREET LENGTH(FEET) = 350.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

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Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.01
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 6.78
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.48
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.91
STREET FLOW TRAVEL TIME(MIN.) = 1.67 Tc(MIN.) = 7.63
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.024
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.70 SUBAREA RUNOFF(CFS) = 2.51
TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 3.15

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 8.44
FLOW VELOCITY(FEET/SEC.) = 3.80 DEPTH*VELOCITY(FT*FT/SEC.) = 1.12
LONGEST FLOWPATH FROM NODE 2251.00 TO NODE 2252.00 = 445.00 FEET.

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.63
RAINFALL INTENSITY(INCH/HR) = 7.02
TOTAL STREAM AREA(ACRES) = 0.88
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.15

FLOW PROCESS FROM NODE 2250.20 TO NODE 2250.40 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1270.00
DOWNSTREAM ELEVATION(FEET) = 1265.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.390

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.00
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 1.00

FLOW PROCESS FROM NODE 2250.40 TO NODE 2252.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1265.00 DOWNSTREAM ELEVATION(FEET) = 1249.00
STREET LENGTH(FEET) = 455.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.28
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 8.51
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.90
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.16
STREET FLOW TRAVEL TIME(MIN.) = 1.94 Tc(MIN.) = 6.33
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.917
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.01 SUBAREA RUNOFF(CFS) = 4.56
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 5.42

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.59
FLOW VELOCITY(FEET/SEC.) = 4.37 DEPTH*VELOCITY(FT*FT/SEC.) = 1.48
LONGEST FLOWPATH FROM NODE 2250.20 TO NODE 2252.00 = 530.00 FEET.

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
TIME OF CONCENTRATION(MIN.) = 6.33
RAINFALL INTENSITY(INCH/HR) = 7.92
TOTAL STREAM AREA(ACRES) = 1.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.42
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	47.11	14.45	4.651	17.69
2	3.15	7.63	7.024	0.88
3	5.42	6.33	7.917	1.20

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	35.71	6.33	7.917
2	39.15	7.63	7.024
3	52.38	14.45	4.651

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 52.38 Tc(MIN.) = 14.45
TOTAL AREA(ACRES) = 19.8
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2252.00 = 2595.00 FEET.

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2249.00 TO NODE 2248.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1320.00
DOWNSTREAM ELEVATION(FEET) = 1314.00
```

```

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ELEVATION DIFFERENCE(FEET) =      6.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    5.250
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.935
SUBAREA RUNOFF(CFS) =      1.12
TOTAL AREA(ACRES) =      0.22  TOTAL RUNOFF(CFS) =      1.12

*****
FLOW PROCESS FROM NODE    2248.00 TO NODE    2247.00 IS CODE =  62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1314.00  DOWNSTREAM ELEVATION(FEET) = 1306.00
STREET LENGTH(FEET) =  100.00  CURB HEIGHT(INCHES) =  6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  8.00
INSIDE STREET CROSSFALL(DECIMAL) =  0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =  0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0150

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      1.61
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =  0.22
  HALFSTREET FLOOD WIDTH(FEET) =  4.72
  AVERAGE FLOW VELOCITY(FEET/SEC.) =  4.72
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  1.04
  STREET FLOW TRAVEL TIME(MIN.) =  0.35  Tc(MIN.) =  5.60
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  8.568
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .5700
  S.C.S. CURVE NUMBER (AMC II) =  0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.570
  SUBAREA AREA(ACRES) =  0.20  SUBAREA RUNOFF(CFS) =  0.98
  TOTAL AREA(ACRES) =  0.4  PEAK FLOW RATE(CFS) =  2.05

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.24  HALFSTREET FLOOD WIDTH(FEET) =  5.52
FLOW VELOCITY(FEET/SEC.) =  4.85  DEPTH*VELOCITY(FT*FT/SEC.) =  1.15
LONGEST FLOWPATH FROM NODE    2249.00 TO NODE    2247.00 =  200.00 FEET.

*****
FLOW PROCESS FROM NODE    2247.00 TO NODE    2246.00 IS CODE =  31
-----

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>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1300.00  DOWNSTREAM(FEET) = 1264.00
FLOW LENGTH(FEET) = 440.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.37
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.05
PIPE TRAVEL TIME(MIN.) = 0.78  Tc(MIN.) = 6.39
LONGEST FLOWPATH FROM NODE 2249.00 TO NODE 2246.00 = 640.00 FEET.
```

FLOW PROCESS FROM NODE 2246.00 TO NODE 2246.00 IS CODE = 1

----->>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 6.39
RAINFALL INTENSITY(INCH/HR) = 7.88
TOTAL STREAM AREA(ACRES) = 0.42
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.05
```

FLOW PROCESS FROM NODE 2245.00 TO NODE 2244.00 IS CODE = 21

----->>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1294.00
DOWNSTREAM ELEVATION(FEET) = 128.00
ELEVATION DIFFERENCE(FEET) = 1166.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.428
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.00
TOTAL AREA(ACRES) = 0.19  TOTAL RUNOFF(CFS) = 1.00
```

FLOW PROCESS FROM NODE 2244.00 TO NODE 2246.00 IS CODE = 62

----->>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1289.00  DOWNSTREAM ELEVATION(FEET) = 1270.00
STREET LENGTH(FEET) = 330.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.38
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 6.51
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.39
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.13
STREET FLOW TRAVEL TIME(MIN.) = 1.25  Tc(MIN.) = 5.68
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.492
```

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 0.57  SUBAREA RUNOFF(CFS) = 2.76
TOTAL AREA(ACRES) = 0.8  PEAK FLOW RATE(CFS) = 3.68
```

END OF SUBAREA STREET FLOW HYDRAULICS:

```
DEPTH(FEET) = 0.29  HALFSTREET FLOOD WIDTH(FEET) = 8.04
FLOW VELOCITY(FEET/SEC.) = 4.81  DEPTH*VELOCITY(FT*FT/SEC.) = 1.38
LONGEST FLOWPATH FROM NODE 2245.00 TO NODE 2246.00 = 430.00 FEET.
```

FLOW PROCESS FROM NODE 2246.00 TO NODE 2246.00 IS CODE = 1

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.68
RAINFALL INTENSITY(INCH/HR) = 8.49
TOTAL STREAM AREA(ACRES) = 0.76
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.68
```

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** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	2.05	6.39	7.875	0.42
2	3.68	5.68	8.492	0.76

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.50	5.68	8.492
2	5.46	6.39	7.875

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 5.50 Tc(MIN.) = 5.68

TOTAL AREA(ACRES) = 1.2

LONGEST FLOWPATH FROM NODE 2249.00 TO NODE 2246.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 2246.00 TO NODE 2252.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1243.00

FLOW LENGTH(FEET) = 525.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 9.64

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 5.50

PIPE TRAVEL TIME(MIN.) = 0.91 Tc(MIN.) = 6.59

LONGEST FLOWPATH FROM NODE 2249.00 TO NODE 2252.00 = 1165.00 FEET.

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.50	6.59	7.718	1.18

LONGEST FLOWPATH FROM NODE 2249.00 TO NODE 2252.00 = 1165.00 FEET.

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** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	52.38	14.45	4.651	19.77

LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2252.00 = 2595.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	29.39	6.59	7.718
2	55.70	14.45	4.651

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 55.70 Tc(MIN.) = 14.45
TOTAL AREA(ACRES) = 21.0

FLOW PROCESS FROM NODE 2252.00 TO NODE 2252.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2252.00 TO NODE 2223.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1243.00 DOWNSTREAM(FEET) = 1242.00
FLOW LENGTH(FEET) = 35.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 15.03
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 55.70
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 14.49
LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2223.00 = 2630.00 FEET.

FLOW PROCESS FROM NODE 2223.00 TO NODE 2281.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1242.00 DOWNSTREAM(FEET) = 1240.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 205.00 CHANNEL SLOPE = 0.0098
CHANNEL FLOW THRU SUBAREA(CFS) = 55.70
FLOW VELOCITY(FEET/SEC) = 3.94 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.87 Tc(MIN.) = 15.35

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LONGEST FLOWPATH FROM NODE 2242.00 TO NODE 2281.00 = 2835.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 21.0 TC(MIN.) = 15.35

PEAK FLOW RATE(CFS) = 55.70

=====

=====

END OF RATIONAL METHOD ANALYSIS





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*AREA ALREADY ACCOUNTED FOR

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2599	2598	2	1290	1288	80	0.51	0.17				
2598	2597	6	1288	1280	800	0.51	3.15	1 SIDE			
2597	2593	3	1274	1267	195						
2593	2593	1						1 OF 2			
2596	2595	2	1290	1288	83.33	0.51	0.09				
2595	2594	6	1288	1274	435	0.51	1.93	2 SIDES			
2594	2593	3	1268	1267.8	30						
2593	2593	1						2 OF 2			
2593	2589	3	1267.8	1267	175						
2589	2589	1						1 OF 2			
2592	2591	2	1288	1286	83.33	0.51	0.08				
2591	2590	6	1286	1274	440	0.51	0.93	2 SIDES			
2590	2589	3	1268	1267.6	40						
2589	2589	1						2 OF 2			
2589	2584	3	1267.6	1259	385						
2584	2584	1						1 OF 2			
2588	2587	2	1282	1281	67.65	0.51	0.10				
2587	2584	6	1281	1265	745	0.51	3.35	2 SIDES			
2584	2584	1						2 OF 2			
2584	2568	3	1259	1257	65						
2568	2568	10						SAVE TO BANK 1			
2580	2579	2	1291.5	1289	87.50	0.57	0.23				
2579	2578	6	1289	1282	785	0.51	2.78	1 SIDE			
2578	2575	3	1276	1267	320						
2575	2575	1						1 OF 2			
2583	2582	2	1286	1285	70	0.51	0.05				
2582	2581	6	1285	1274	315	0.51	1.06	2 SIDES			
2581	2575	3	1268	1267	60						
2575	2575	1						2 OF 2			
2575	2573	3	1267	1263.8	105						
2573	2573	1						1 OF 2			
2577	2576	2	1286	1284	80	0.51	0.08				
2576	2574	6	1284	1270	455	0.51	2.24	1 SIDE			
2574	2573	3	1264	1263.8	10						



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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2573	2573	1						2 OF 2			
2573	2569	3	1263.8	1263.3	65						
2569	2569	1						1 OF 2			
2572	2571	2	1284	1283	70	0.51	0.04				
2571	2570	6	1283	1270	365	0.51	1.22	2 SIDES			
2570	2569	3	1264	1263	60						
2569	2569	1						2 OF 2			
2569	2568	3	1263	1257	230						
2568	2568	11						ADD BANK 1			
2568	2568	12						CLEAR BANK 1			
2568	2565	3	1257	1251	205						
2565	2565	1						1 OF 2			
2568.2	2567	2	1271	1269	81.58	0.51	0.07				
2567	2566	6	1269	1257	460	0.51	2.15	1 SIDE			
2566	2565	3	1257	1256.8	10						
2565	2565	1						2 OF 2			
2565	2544	3	1256.8	1256	45						
2544	2544	10						SAVE TO BANK 1			
2553	2553.2	2	1265	1263	80	0.51	0.11				
2553.2	2551.2	6	1263	1261	170	0.51	0.58	1 SIDE			
2551.2	2552	3	1255	1254	30						
2552	2552	1						2 OF 2			
2552	2545	3	1254	1250	325						
2545	2545	1						1 OF 3			
2551	2550	2	1262	1261	65	0.51	0.13				
2550	2549	6	1261	1257	330	0.51	1.84	1 SIDE			
2549	2545	3	1251	1250	10						
2545	2545	1						2 OF 3			
2548	2547	2	1265	1264	68.75	0.51	0.19				
2547	2546	5	1264	1258	410	0.51	3.15				
2546	2545	3	1252	1250	45						
2545	2545	1						3 OF 3			
2545	2544	3	1250	1249	60						



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									1	2	3
2544	2544	11						ADD BANK 1			
2544	2544	12						CLEAR BANK 1			
2544	2542	3	1249	1248	125						
2542	2542	1						1 OF 2			
2543	2542	2	1255	1254	65	0.51	0.39	2 SIDES			
2542	2542	1						2 OF 2			
2542	2515	3	1254	1246.7	60						
2515	2515	10						SAVE TO BANK 1			
2541	2540	2	1315	1310	100	0.9	0.20				
2540	2539	6	1310	1285	335	0.9	0.50	1 SIDE			
2539	2538	3	1279	1270	310						
2538	2538	1						1 OF 2			
2537	2536	2	1285	1282	95	0.9	0.15				
2536	2538	6	1282	1270	210	0.89	0.32	1 SIDE			
2538	2538	1						2 OF 2			
2538	2534	3	1264	1250	480						
2534	2534	1						1 OF 2			
2533	2532	2	1270	1265	70	0.88	0.37				
2532	2534	6	1265	1256	375	0.88	1.06	1 SIDE			
2534	2534	1						2 OF 2			
2534	2527	3	1250	1247.2	460						
2527	2527	1						1 OF 2			
2526	2525	2	1256	1255	65	0.51	0.29				
2525	2527	6	1255	1253.2	355	0.51	0.79	2 SIDES			
2527	2527	1						2 OF 2			
2527	2515	3	1247.2	1246.7	45						
2515	2515	10						SAVE TO BANK 2			
2523	2522	2	1275	1274	65	0.88	0.19				
2522	2520	6	1274	1260	820	0.88	1.30	2 SIDES			
2520	2519	3	1248	1247.2	515						
2519	2519	1						1 OF 2			
2518	2517	2	1260	1259	66.67	0.88	0.13				

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2437	2436	2	897	895	80	0.57	0.13				
2436	2435	6	895	894	300	0.57	0.86	2 SIDES			
2435	2438	3	888	887	110						
2438	2438	1						2 OF 2			
2438	2434	3	889	887	355						
2434	2434	1						1 OF 2			
2433	2432	2	903	899	95	0.57	0.15				
2432	2431	5	899	896	510	0.57	2.93				
2431	2434	3	890	889	65						
2434	2434	1						2 OF 2			
2434	2430	3	889	888	45						
2430	2430	1						1 OF 2			
2429	2428	2	1290	1235	100	0.25	0.29				
2428	2427	5	1235	910	710	0.26	23.50				
2427	2430	3	904	888	395						
2430	2430	1						2 OF 2			
2430	2391	3	888	877	400						
2391	2391	10						SAVE BANK 1			
2417	2416	2	906	905	65	0.57	0.06				
2416	2415	6	905	895	325	0.57	1.88				
2415	2414	3	889	888	160						
2414	2414	10						SAVE BANK 2			
2400	2399	2	1000	987	100	0.89	0.15				
2399	2398	6	987	940	445	0.89	0.68	2 SIDES			
2398	2397	3	934	908	400						
2397	2397	1						1 OF 2			
2396	2395	2	940	930	100	0.57	0.18				
2395	2397	6	930	916	285	0.57	0.42	2 SIDES			
2397	2397	1						2 OF 2			
2397	2394	3	910	894	455						
2394	2394	1						1 OF 2			
2393	2392	2	916	912	97.50	0.57	0.19				
2392	2394	6	912	900	365	0.57	0.56	2 SIDES			



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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2394	2394	1						2 OF 2			
2394	2414	3	894	888	105						
2414	2414	11						ADD BANK 2			
2414	2414	12						CLEAR BANK 2			
2414	2391	5	894	883	320		*				
2391	2391	11						ADD BANK 1			
2391	2391	12						CLEAR BANK 1			
2391	2418	3	877	869	267						
2418	2418	10						SAVE BANK 1			
2425	2424	2	1198	1135	100	0.25	0.52				
2424	2423	5	1135	926	715	0.25	6.25				
2423	2422.5	3	920	891	75						
2422.5	2422.5	1						1 OF 2			
2422.7	2422.6	2	914	912	80	0.25	0.11				
2422.6	2422.5	5	912	897	550	0.3	0.53				
2422.5	2422.5	1						2 OF 2			
2422.5	2422	3	891	881	350						
2422	2422	10						SAVE TO BANK 2			
2421	2420	2	1185	1143	100	0.25	0.56				
2420	2419	5	1143	918	765	0.25	4.46				
2419	2422.2	3	912	885	80						
2422.2	2422.2	1						1 of 2			
2422.6	2422.4	2	897	895	80	0.3	0.14				
2422.4	2422.2	5	895	891	145	0.3	0.31				
2422.2	2422.2	1						2 of 2			
2422.2	2422	3	885	881	400						
2422	2422	11						Add bank 2			
2422	2422	12						Clear bank 2			
2422	2418	3	881	869	690						
2418	2418	11						ADD BANK 1			
2418	2418	12						CLEAR BANK 1			
2418	2418	10						SAVE TO BANK 1			
2418.9	2418.8	2	922	920	80	0.51	0.24				



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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2418.8	2418.2	6	920	907	660	0.51	2.71	2 sides			
2418.2	2418.2	1						1 of 2			
2417.84	2417.85	2	919	918	70	0.57	0.08				
2417.85	2418.2	6	918	907	1005	0.57	3.99	2 sides			
2418.2	2418.2	1						2 of 2			
2418.2	2418.7	5	907	902	425	0.57	0.69				
2418.7	2418.6	3	896	890	145						
2418.6	2418.6	10						save to Bank 2			
2418.5	2418.4	2	1105	1055	100	0.25	0.25				
2418.4	2418.3	5	1055	909	410	0.25	4.91				
2418.3	2418.32	3	903	900	340						
2418.32	2418.32	1						1 of 2			
2418.1	2417.9	2	925	918	75	0.55	0.08				
2417.9	2417.91	6	918	912	115	0.57	0.51	2 sides			
2417.91	2417.8	5	912	908	530	0.57	2.18				
2417.8	2417.32	3	902	900	50						
2417.32	2417.32	1						2 of 2			
2418.32	2417.7	3	900	899	115						
2417.7	2417.7	10						save to bank 3			
2417.6	2417.5	2	1185	1145	100	0.3	0.34				
2417.5	2417.4	5	1145	908	580	0.3	3.81				
2417.4	2417.3	3	902	899	110						
2417.3	2417.3	1						1 of 2			
2417.2	2417.1	2	1190	1136	100	0.3	0.21				
2417.1	2417.3	5	1136	910	1085	0.3	6.18				
2417.3	2417.3	1						2 of 2			
2417.3	2417.7	3	904	899	85						
2417.7	2417.7	1						1 OF 2			
2417.7	2417.7	7	Q=308.19		A=192.1	T _c =17.37		ADD RUN 25.1			
2417.7	2417.7	1						2 OF 2			
2417.7	2417.7	11						ADD BANK 3			
2417.7	2417.7	12						CLEAR BANK 3			
2417.7	2418.6	3	899	891	515						
2418.6	2418.6	11						ADD BANK 2			



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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2418.6	2418.6	12						CLEAR BANK 2			
2418.6	2418	3	891	869	745						
2418	2418	11						ADD BANK 1			
2418	2418	12						CLEAR BANK 1			
2418	2380.2	3	869	858	325						
2380.2	2380.2	10						SAVE TO BANK 1			
2415.9	2415.8	2	915	907	85	0.57	0.10				
2415.8	2415.7	6	907	902	395	0.57	2.43	2 SIDES			
2415.7	2415.6	3	896	895	245						
2415.6	2415.6	1						1 OF 2			
2415.5	2415.4	2	905	904	68.75	0.57	0.07				
2415.4	2415.3	6	904	898	420	0.57	1.93	2 SIDES			
2415.3	2415.6	3	892	891	40						
2415.6	2415.6	1						2 OF 2			
2415.6	2415.2	3	891	874	600						
2415.2	2415.2	1						1 OF 2			
2415.1	2414.9	2	902	900	81.58	0.57	0.12				
2414.9	2415.2	6	900	880	725	0.57	3.27	2 SIDES			
2415.2	2415.2	1						2 OF 2			
2415.2	2414.8	3	874	849	55						
2414.8	2414.7	5	855	854	135	0.57	8.65				
2414.7	2380.2	3	848	847	105						
2380.2	2380.2	11						ADD BANK 1			
2380.2	2380.2	12						CLEAR BANK 1			
2380.2	2380	3	847	831	65						
2380	2380	10						SAVE TO BANK 1			
2413	2412	2	891	888	95	0.57	0.10				
2412	2412.5	6	888	882	358	0.57	1.84	1 SIDE			
2412.5	2412.5	1						2 OF 2			
2412.5	2411	3	876	874	360						
2411	2411	1						1 OF 2			
2410	2409	2	895	894	68.75	0.57	0.07				
2409	2411	6	894	880	495	0.57	3.81	2 SIDES			
2411	2411	1						2 OF 2			

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2380	2379	5	837	825	170						
2379	2379	10						SAVE TO BANK 1			
2378	2377	2	1175	1155	85	0.25	0.10				
2377	2376	5	1155	1070	300	0.25	1.84				
2376	2375	5	1070	955	605	0.25	10.41				
2375	2374	5	955	885	455	0.26	16.11				
2374	2379.2	5	885	855	420	0.3	4.23				
2379.2	2379.2	10						SAVE TO BANK 2			
2373	2372	2	925	924	65	0.57	0.09				
2372	2371	6	924	914	290	0.57	1.30	2 SIDES			
2371	2370	3	908	906	310						
2370	2370	1						1 OF 2			
2369	2368	2	920	917	95	0.57	0.11				
2368	2370	6	917	912	360	0.57	2.01	2 SIDES			
2370	2370	1						2 OF 2			
2370	2367	3	906	894	300						
2367	2367	1						1 OF 2			
2366	2365	2	911	909	81.58	0.57	0.06				
2365	2367	6	909	900	405	0.57	1.80	1 SIDE			
2367	2367	1						2 OF 2			
2367	2364	3	894	887	205						
2364	2364	1						1 OF 2			
2363	2362	2	905	903	83.33	0.57	0.10				
2362	2364	6	903	894	230	0.57	1.02	1 SIDE			
2364	2364	1						2 OF 2			
2364	2361	3	888	884	100						
2361	2361	1						1 OF 2			
2360	2359	2	898	895	95	0.57	0.14				
2359	2361	6	895	890	195	0.57	0.88	1SIDE			
2361	2361	1						2 OF 2			
2361	2358	3	884	879	145						
2358	2358	1						1 OF 2			
2357	2356	2	895	892.4	85	0.57	0.10				
2356	2358	6	892.4	885	370	0.57	1.77	2 SIDES			



Newland Sierra

Date:
2/16/2017

Job #: 2660-02

Run Name:
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of 15

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2358	2358	1						2 OF 2			
2358	2555	3	879	865	205						
2555	2554.8	5	865	864	50	0.3	0.78				
2554.8	2379.2	5	864	855	300	0.28	4.94				
2379.2	2379.2	11						ADD BANK 2			
2379.2	2379.2	12						CLEAR BANK 2			
2379.2	2379	5	855	825	610	0.3	5.40				
2379	2379	11						ADD BANK 1			
2379	2379	12						CLEAR BANK 1			
2379	2379	1						1 OF 2			
2370	2369	2	1065	1020	95	0.42	0.11				
2369	2368	5	1020	860	360						
2369	2368	8				0.42	0.93				
2368	2367	3	865	830	115						
2367	2379	5	830	825	110						
2379	2379	1						2 OF 2			
2379	2378	5	825	815	655						
2379	2378	8				0.42	13.91				
2378	2378	1						1 OF 3			
2366	2365	2	1180	1175	80.00	0.42	0.13				
2365	2364	5	1175	860	665						
2365	2364	8				0.42	3.34				
2364	2363	3	860	842	100						
2363	2378	5	842	815	450						
2378	2378	1						2 OF 3			
2362	2361	2	1175	1165	80	0.42	0.10				
2361	2360	5	1165	865	580.00						
2361	2360	8				0.42	2.99				
2360	2359	3	865	839	100						
2359	2378	5	839	815	310						
2378	2378	1						3 OF 3			
2378	25	5	815	795	935						
2378	25	8				0.42	4.80				
25	25	1						1 OF 2			
25.3	25.2	2	1175	1150	90	0.38	0.29				

[illegible]

Canyon Detention - Node 2472

Node to Node		Code	C Factor	Area (ac.)	C x A
2599	2598	2	0.51	0.17	0.09
2598	2597	6	0.51	3.15	1.61
2596	2595	2	0.51	0.09	0.05
2595	2594	6	0.51	1.93	0.98
2592	2591	2	0.51	0.08	0.04
2591	2590	6	0.51	0.93	0.47
2588	2587	2	0.51	0.10	0.05
2587	2584	6	0.51	3.35	1.71
2580	2579	2	0.57	0.23	0.13
2579	2578	6	0.51	2.78	1.42
2583	2582	2	0.51	0.05	0.03
2582	2581	6	0.51	1.06	0.54
2577	2576	2	0.51	0.08	0.04
2576	2574	6	0.51	2.24	1.14
2572	2571	2	0.51	0.04	0.02
2571	2570	6	0.51	1.22	0.62
2568.2	2567	2	0.51	0.07	0.04
2567	2566	6	0.51	2.15	1.10
2553	2553.2	2	0.51	0.11	0.06
2553.2	2551.2	6	0.51	0.58	0.30
2551	2550	2	0.51	0.13	0.07
2550	2549	6	0.51	1.84	0.94
2548	2547	2	0.51	0.19	0.10
2547	2546	5	0.51	3.15	1.61
2543	2542	2	0.51	0.39	0.20
2541	2540	2	0.9	0.20	0.18
2540	2539	6	0.9	0.50	0.45
2537	2536	2	0.9	0.15	0.14
2536	2538	6	0.89	0.32	0.28
2533	2532	2	0.88	0.37	0.33
2532	2534	6	0.88	1.06	0.93
2526	2525	2	0.51	0.29	0.15
2525	2527	6	0.51	0.79	0.40
2523	2522	2	0.88	0.19	0.17
2522	2520	6	0.88	1.30	1.14
2518	2517	2	0.88	0.13	0.11
2517	2519	6	0.88	1.01	0.89
2513	2512	2	0.88	0.16	0.14
2512	2514	6	0.88	1.43	1.26
2509	2508	2	0.88	0.13	0.11
2508	2510	6	0.88	0.29	0.26
2505	2504	2	0.88	0.16	0.14
2504	2506	6	0.88	0.24	0.21

2501	2500	2	0.88	0.13	0.11
2500	2502	6	0.89	0.29	0.26
2499.6	2499.8	2	0.89	0.20	0.18
2499.8	2499.2	6	0.89	0.27	0.24
2487	2486	2	0.25	0.27	0.07
2486	2485	5	0.25	3.38	0.85
2484	2483	2	0.25	0.25	0.06
2481	2480	2	0.25	0.12	0.03
2480	2482	5	0.25	1.46	0.37
2477	2476	2	0.25	0.10	0.03
2476	2475	5	0.25	0.48	0.12
2515.8	2515.7	2	0.25	0.24	0.06
2515.7	2515.6	5	0.25	3.25	0.81
2474	2473.5	5	0.25	10.53	2.63
2488	2473	2	0.25	0.50	0.13
2473	2473.5	5	0.27	12.02	3.25
2473.5	2472	5	0.29	13.37	3.88
Total				81.69	33.68
Avg C =				0.41	

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fuscoe Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* PROPOSED HYDROLOGY *
* SUB BASIN 25 - NO DETENTION *
* JANUARY 2017 *

FILE NAME: P-25.DAT

TIME/DATE OF STUDY: 11:24 02/15/2017

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

P-25.TXT

FLOW PROCESS FROM NODE 2599.00 TO NODE 2598.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1290.00

DOWNSTREAM ELEVATION(FEET) = 1288.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423

SUBAREA RUNOFF(CFS) = 0.64

TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 0.64

FLOW PROCESS FROM NODE 2598.00 TO NODE 2597.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1288.00 DOWNSTREAM ELEVATION(FEET) = 1280.00

STREET LENGTH(FEET) = 800.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.92

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.39

HALFSTREET FLOOD WIDTH(FEET) = 13.22

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.64

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.03

STREET FLOW TRAVEL TIME(MIN.) = 5.06 Tc(MIN.) = 12.06

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.227

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

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                                P-25.TXT
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 3.15      SUBAREA RUNOFF(CFS) = 8.40
TOTAL AREA(ACRES) = 3.3        PEAK FLOW RATE(CFS) = 8.85

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.46    HALFSTREET FLOOD WIDTH(FEET) = 16.72
FLOW VELOCITY(FEET/SEC.) = 3.04    DEPTH*VELOCITY(FT*FT/SEC.) = 1.40
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2597.00 = 880.00 FEET.

*****
FLOW PROCESS FROM NODE 2597.00 TO NODE 2593.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1274.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 195.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.52
ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.85
PIPE TRAVEL TIME(MIN.) = 0.31    Tc(MIN.) = 12.36
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2593.00 = 1075.00 FEET.

*****
FLOW PROCESS FROM NODE 2593.00 TO NODE 2593.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.36
RAINFALL INTENSITY(INCH/HR) = 5.14
TOTAL STREAM AREA(ACRES) = 3.32
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.85

*****
FLOW PROCESS FROM NODE 2596.00 TO NODE 2595.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.33
UPSTREAM ELEVATION(FEET) = 1290.00
DOWNSTREAM ELEVATION(FEET) = 1288.00

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                                P-25.TXT
ELEVATION DIFFERENCE(FEET) =      2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.241
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.262
SUBAREA RUNOFF(CFS) =      0.33
TOTAL AREA(ACRES) =      0.09  TOTAL RUNOFF(CFS) =      0.33

*****
FLOW PROCESS FROM NODE    2595.00 TO NODE    2594.00 IS CODE =  62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1288.00  DOWNSTREAM ELEVATION(FEET) = 1274.00
STREET LENGTH(FEET) =  435.00  CURB HEIGHT(INCHES) =  6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =  0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =  0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.35
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =  0.25
  HALFSTREET FLOOD WIDTH(FEET) =   6.31
  AVERAGE FLOW VELOCITY(FEET/SEC.) =   3.24
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   0.82
STREET FLOW TRAVEL TIME(MIN.) =  2.24  Tc(MIN.) =   9.48
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.105
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) =  0
AREA-AVERAGE RUNOFF COEFFICIENT =  0.510
SUBAREA AREA(ACRES) =   1.93  SUBAREA RUNOFF(CFS) =   6.01
TOTAL AREA(ACRES) =   2.0  PEAK FLOW RATE(CFS) =   6.29

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.30  HALFSTREET FLOOD WIDTH(FEET) =   8.51
FLOW VELOCITY(FEET/SEC.) =  3.74  DEPTH*VELOCITY(FT*FT/SEC.) =   1.11
LONGEST FLOWPATH FROM NODE    2596.00 TO NODE    2594.00 =   518.33 FEET.

*****
FLOW PROCESS FROM NODE    2594.00 TO NODE    2593.00 IS CODE =  31
-----

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P-25.TXT

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 1267.80
FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.08
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.29
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 9.58
LONGEST FLOWPATH FROM NODE 2596.00 TO NODE 2593.00 = 548.33 FEET.
```

FLOW PROCESS FROM NODE 2593.00 TO NODE 2593.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.58
RAINFALL INTENSITY(INCH/HR) = 6.06
TOTAL STREAM AREA(ACRES) = 2.02
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.29
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.85	12.36	5.143	3.32
2	6.29	9.58	6.064	2.02

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	13.14	9.58	6.064
2	14.18	12.36	5.143

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 14.18 Tc(MIN.) = 12.36
TOTAL AREA(ACRES) = 5.3
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2593.00 = 1075.00 FEET.
```

FLOW PROCESS FROM NODE 2593.00 TO NODE 2589.00 IS CODE = 31

P-25.TXT

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1267.80 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 175.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.26
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 14.18
PIPE TRAVEL TIME(MIN.) = 0.55 Tc(MIN.) = 12.92
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2589.00 = 1250.00 FEET.
```

FLOW PROCESS FROM NODE 2589.00 TO NODE 2589.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.92
RAINFALL INTENSITY(INCH/HR) = 5.00
TOTAL STREAM AREA(ACRES) = 5.34
PEAK FLOW RATE(CFS) AT CONFLUENCE = 14.18
```

FLOW PROCESS FROM NODE 2592.00 TO NODE 2591.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.33
UPSTREAM ELEVATION(FEET) = 1288.00
DOWNSTREAM ELEVATION(FEET) = 1286.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.241
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.262
SUBAREA RUNOFF(CFS) = 0.30
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.30
```

FLOW PROCESS FROM NODE 2591.00 TO NODE 2590.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1286.00 DOWNSTREAM ELEVATION(FEET) = 1274.00
```

P-25.TXT

STREET LENGTH(FEET) = 440.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.70
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.22
HALFSTREET FLOOD WIDTH(FEET) = 4.46
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.69
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.58
STREET FLOW TRAVEL TIME(MIN.) = 2.73 Tc(MIN.) = 9.97
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.910
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 0.93 SUBAREA RUNOFF(CFS) = 2.80
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.04

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.25
FLOW VELOCITY(FEET/SEC.) = 2.99 DEPTH*VELOCITY(FT*FT/SEC.) = 0.75
LONGEST FLOWPATH FROM NODE 2592.00 TO NODE 2590.00 = 523.33 FEET.

FLOW PROCESS FROM NODE 2590.00 TO NODE 2589.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 1267.60
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.95
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.04
PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 10.10
LONGEST FLOWPATH FROM NODE 2592.00 TO NODE 2589.00 = 563.33 FEET.

P-25.TXT

FLOW PROCESS FROM NODE 2589.00 TO NODE 2589.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	10.10
RAINFALL INTENSITY(INCH/HR) =	5.86
TOTAL STREAM AREA(ACRES) =	1.01
PEAK FLOW RATE(CFS) AT CONFLUENCE =	3.04

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	14.18	12.92	4.999	5.34
2	3.04	10.10	5.859	1.01

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	15.15	10.10	5.859
2	16.78	12.92	4.999

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) =	16.78	Tc(MIN.) =	12.92
TOTAL AREA(ACRES) =	6.4		
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2589.00 =	1250.00	FEET.	

FLOW PROCESS FROM NODE 2589.00 TO NODE 2584.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1267.60	DOWNSTREAM(FEET) =	1259.00
FLOW LENGTH(FEET) =	385.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS	13.5	INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	10.24		
ESTIMATED PIPE DIAMETER(INCH) =	21.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	16.78		
PIPE TRAVEL TIME(MIN.) =	0.63	Tc(MIN.) =	13.55
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2584.00 =	1635.00	FEET.	

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FLOW PROCESS FROM NODE 2584.00 TO NODE 2584.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 13.55
 RAINFALL INTENSITY(INCH/HR) = 4.85
 TOTAL STREAM AREA(ACRES) = 6.35
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.78

FLOW PROCESS FROM NODE 2588.00 TO NODE 2587.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 67.65
 UPSTREAM ELEVATION(FEET) = 1282.00
 DOWNSTREAM ELEVATION(FEET) = 1281.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.668
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.999
 SUBAREA RUNOFF(CFS) = 0.36
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.36

FLOW PROCESS FROM NODE 2587.00 TO NODE 2584.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1281.00 DOWNSTREAM ELEVATION(FEET) = 1265.00
 STREET LENGTH(FEET) = 745.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.94
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 8.37
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.02
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.89
STREET FLOW TRAVEL TIME(MIN.) = 4.12 Tc(MIN.) = 11.78
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.304
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 3.35 SUBAREA RUNOFF(CFS) = 9.06
TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 9.33

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 11.09
FLOW VELOCITY(FEET/SEC.) = 3.46 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
LONGEST FLOWPATH FROM NODE 2588.00 TO NODE 2584.00 = 812.65 FEET.

FLOW PROCESS FROM NODE 2584.00 TO NODE 2584.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.78
RAINFALL INTENSITY(INCH/HR) = 5.30
TOTAL STREAM AREA(ACRES) = 3.45
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.33

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.78	13.55	4.849	6.35
2	9.33	11.78	5.304	3.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	24.67	11.78	5.304
2	25.31	13.55	4.849

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 25.31 Tc(MIN.) = 13.55

TOTAL AREA(ACRES) = 9.8

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2584.00 = 1635.00 FEET.

FLOW PROCESS FROM NODE 2584.00 TO NODE 2568.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1257.00

FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 12.48

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 25.31

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 13.63

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2568.00 = 1700.00 FEET.

FLOW PROCESS FROM NODE 2568.00 TO NODE 2568.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

=====

FLOW PROCESS FROM NODE 2580.00 TO NODE 2579.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 87.50

UPSTREAM ELEVATION(FEET) = 1291.50

DOWNSTREAM ELEVATION(FEET) = 1289.00

ELEVATION DIFFERENCE(FEET) = 2.50

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.289

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.953

SUBAREA RUNOFF(CFS) = 1.04

TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 1.04

FLOW PROCESS FROM NODE 2579.00 TO NODE 2578.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

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=====

UPSTREAM ELEVATION(FEET) = 1289.00 DOWNSTREAM ELEVATION(FEET) = 1282.00
STREET LENGTH(FEET) = 785.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.97
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.40
HALFSTREET FLOOD WIDTH(FEET) = 13.59
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.53
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.01
STREET FLOW TRAVEL TIME(MIN.) = 5.17 Tc(MIN.) = 11.46
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.400

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.515
SUBAREA AREA(ACRES) = 2.78 SUBAREA RUNOFF(CFS) = 7.66
TOTAL AREA(ACRES) = 3.0 PEAK FLOW RATE(CFS) = 8.36

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.46 HALFSTREET FLOOD WIDTH(FEET) = 16.72
FLOW VELOCITY(FEET/SEC.) = 2.87 DEPTH*VELOCITY(FT*FT/SEC.) = 1.32
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2578.00 = 872.50 FEET.

FLOW PROCESS FROM NODE 2578.00 TO NODE 2575.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1276.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 320.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.46
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.36
PIPE TRAVEL TIME(MIN.) = 0.56 Tc(MIN.) = 12.03

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LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2575.00 = 1192.50 FEET.

FLOW PROCESS FROM NODE 2575.00 TO NODE 2575.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.03
RAINFALL INTENSITY(INCH/HR) = 5.24
TOTAL STREAM AREA(ACRES) = 3.01
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.36

FLOW PROCESS FROM NODE 2583.00 TO NODE 2582.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1286.00
DOWNSTREAM ELEVATION(FEET) = 1285.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.889
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.871
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.18

FLOW PROCESS FROM NODE 2582.00 TO NODE 2581.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1285.00 DOWNSTREAM ELEVATION(FEET) = 1274.00
STREET LENGTH(FEET) = 315.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

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Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.81
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.26
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.03
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.64
STREET FLOW TRAVEL TIME(MIN.) = 1.73 Tc(MIN.) = 9.62
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.045
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 1.06 SUBAREA RUNOFF(CFS) = 3.27
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 3.42

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.25
FLOW VELOCITY(FEET/SEC.) = 3.36 DEPTH*VELOCITY(FT*FT/SEC.) = 0.85
LONGEST FLOWPATH FROM NODE 2583.00 TO NODE 2581.00 = 385.00 FEET.

FLOW PROCESS FROM NODE 2581.00 TO NODE 2575.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1268.00 DOWNSTREAM(FEET) = 1267.00
FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.16
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.42
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 9.78
LONGEST FLOWPATH FROM NODE 2583.00 TO NODE 2575.00 = 445.00 FEET.

FLOW PROCESS FROM NODE 2575.00 TO NODE 2575.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.78
RAINFALL INTENSITY(INCH/HR) = 5.98

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TOTAL STREAM AREA(ACRES) = 1.11
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.42

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.36	12.03	5.236	3.01
2	3.42	9.78	5.981	1.11

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.23	9.78	5.981
2	11.36	12.03	5.236

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.36 Tc(MIN.) = 12.03
TOTAL AREA(ACRES) = 4.1
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2575.00 = 1192.50 FEET.

FLOW PROCESS FROM NODE 2575.00 TO NODE 2573.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1267.00 DOWNSTREAM(FEET) = 1263.80
FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.49
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.36
PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 12.19
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2573.00 = 1297.50 FEET.

FLOW PROCESS FROM NODE 2573.00 TO NODE 2573.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.19
RAINFALL INTENSITY(INCH/HR) = 5.19
TOTAL STREAM AREA(ACRES) = 4.12

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PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.36

FLOW PROCESS FROM NODE 2577.00 TO NODE 2576.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1286.00

DOWNSTREAM ELEVATION(FEET) = 1284.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423

SUBAREA RUNOFF(CFS) = 0.30

TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.30

FLOW PROCESS FROM NODE 2576.00 TO NODE 2574.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1284.00 DOWNSTREAM ELEVATION(FEET) = 1270.00

STREET LENGTH(FEET) = 455.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

*TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.93

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.32

HALFSTREET FLOOD WIDTH(FEET) = 9.50

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.85

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.22

STREET FLOW TRAVEL TIME(MIN.) = 1.97 Tc(MIN.) = 8.97

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.326

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

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S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 2.24 SUBAREA RUNOFF(CFS) = 7.23
TOTAL AREA(ACRES) = 2.3 PEAK FLOW RATE(CFS) = 7.48

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 12.47
FLOW VELOCITY(FEET/SEC.) = 4.47 DEPTH*VELOCITY(FT*FT/SEC.) = 1.68
LONGEST FLOWPATH FROM NODE 2577.00 TO NODE 2574.00 = 535.00 FEET.

FLOW PROCESS FROM NODE 2574.00 TO NODE 2573.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1263.80
FLOW LENGTH(FEET) = 10.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.09
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.48
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 8.99
LONGEST FLOWPATH FROM NODE 2577.00 TO NODE 2573.00 = 545.00 FEET.

FLOW PROCESS FROM NODE 2573.00 TO NODE 2573.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.99
RAINFALL INTENSITY(INCH/HR) = 6.32
TOTAL STREAM AREA(ACRES) = 2.32
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.48

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.36	12.19	5.189	4.12
2	7.48	8.99	6.316	2.32

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

P-25.TXT

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.82	8.99	6.316
2	17.51	12.19	5.189

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 17.51 Tc(MIN.) = 12.19
TOTAL AREA(ACRES) = 6.4
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2573.00 = 1297.50 FEET.

FLOW PROCESS FROM NODE 2573.00 TO NODE 2569.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1263.80 DOWNSTREAM(FEET) = 1263.30
FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.81
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 17.51
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 12.35
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2569.00 = 1362.50 FEET.

FLOW PROCESS FROM NODE 2569.00 TO NODE 2569.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.35
RAINFALL INTENSITY(INCH/HR) = 5.15
TOTAL STREAM AREA(ACRES) = 6.44
PEAK FLOW RATE(CFS) AT CONFLUENCE = 17.51

FLOW PROCESS FROM NODE 2572.00 TO NODE 2571.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1284.00

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DOWNSTREAM ELEVATION(FEET) = 1283.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.889
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.871
SUBAREA RUNOFF(CFS) = 0.14
TOTAL AREA(ACRES) = 0.04 TOTAL RUNOFF(CFS) = 0.14

*****
FLOW PROCESS FROM NODE 2571.00 TO NODE 2570.00 IS CODE = 62
-----
>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<
=====
UPSTREAM ELEVATION(FEET) = 1283.00 DOWNSTREAM ELEVATION(FEET) = 1270.00
STREET LENGTH(FEET) = 365.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.00
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.22
HALFSTREET FLOOD WIDTH(FEET) = 4.52
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.10
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.67
STREET FLOW TRAVEL TIME(MIN.) = 1.97 Tc(MIN.) = 9.85
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.953
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 1.22 SUBAREA RUNOFF(CFS) = 3.70
TOTAL AREA(ACRES) = 1.3 PEAK FLOW RATE(CFS) = 3.83

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 6.58
FLOW VELOCITY(FEET/SEC.) = 3.47 DEPTH*VELOCITY(FT*FT/SEC.) = 0.89
LONGEST FLOWPATH FROM NODE 2572.00 TO NODE 2570.00 = 435.00 FEET.

*****
FLOW PROCESS FROM NODE 2570.00 TO NODE 2569.00 IS CODE = 31

```

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1263.00
 FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.35
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.83
 PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 10.01
 LONGEST FLOWPATH FROM NODE 2572.00 TO NODE 2569.00 = 495.00 FEET.

FLOW PROCESS FROM NODE 2569.00 TO NODE 2569.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.01
 RAINFALL INTENSITY(INCH/HR) = 5.89
 TOTAL STREAM AREA(ACRES) = 1.26
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.83

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	17.51	12.35	5.146	6.44
2	3.83	10.01	5.893	1.26

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.12	10.01	5.893
2	20.85	12.35	5.146

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.85 Tc(MIN.) = 12.35
 TOTAL AREA(ACRES) = 7.7
 LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2569.00 = 1362.50 FEET.

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FLOW PROCESS FROM NODE 2569.00 TO NODE 2568.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1263.00 DOWNSTREAM(FEET) = 1257.00
FLOW LENGTH(FEET) = 230.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.35
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 20.85
PIPE TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 12.69
LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2568.00 = 1592.50 FEET.

FLOW PROCESS FROM NODE 2568.00 TO NODE 2568.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.85	12.69	5.057	7.70

LONGEST FLOWPATH FROM NODE 2580.00 TO NODE 2568.00 = 1592.50 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	25.31	13.63	4.829	9.80

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2568.00 = 1700.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	44.41	12.69	5.057
2	45.22	13.63	4.829

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 45.22 Tc(MIN.) = 13.63
TOTAL AREA(ACRES) = 17.5

FLOW PROCESS FROM NODE 2568.00 TO NODE 2568.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<<

P-25.TXT

FLOW PROCESS FROM NODE 2568.00 TO NODE 2565.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1257.00 DOWNSTREAM(FEET) = 1251.00
FLOW LENGTH(FEET) = 205.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 14.31
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 45.22
PIPE TRAVEL TIME(MIN.) = 0.24 Tc(MIN.) = 13.87
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2565.00 = 1905.00 FEET.

FLOW PROCESS FROM NODE 2565.00 TO NODE 2565.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.87
RAINFALL INTENSITY(INCH/HR) = 4.78
TOTAL STREAM AREA(ACRES) = 17.50
PEAK FLOW RATE(CFS) AT CONFLUENCE = 45.22

FLOW PROCESS FROM NODE 2568.20 TO NODE 2567.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58
UPSTREAM ELEVATION(FEET) = 1271.00
DOWNSTREAM ELEVATION(FEET) = 1269.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.114
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.346
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2567.00 TO NODE 2566.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1269.00  DOWNSTREAM ELEVATION(FEET) = 1257.00
STREET LENGTH(FEET) = 460.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.68
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.32
HALFSTREET FLOOD WIDTH(FEET) = 9.57
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.56
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.13
STREET FLOW TRAVEL TIME(MIN.) = 2.16  Tc(MIN.) = 9.27
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.193
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 2.15  SUBAREA RUNOFF(CFS) = 6.79
TOTAL AREA(ACRES) = 2.2  PEAK FLOW RATE(CFS) = 7.01
```

```
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.38  HALFSTREET FLOOD WIDTH(FEET) = 12.59
FLOW VELOCITY(FEET/SEC.) = 4.11  DEPTH*VELOCITY(FT*FT/SEC.) = 1.56
LONGEST FLOWPATH FROM NODE 2568.20 TO NODE 2566.00 = 541.58 FEET.
```

```
FLOW PROCESS FROM NODE 2566.00 TO NODE 2565.00 IS CODE = 31
```

```
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1257.00  DOWNSTREAM(FEET) = 1256.80
FLOW LENGTH(FEET) = 10.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.97
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.01
```

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PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 9.29
 LONGEST FLOWPATH FROM NODE 2568.20 TO NODE 2565.00 = 551.58 FEET.

FLOW PROCESS FROM NODE 2565.00 TO NODE 2565.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.29
 RAINFALL INTENSITY(INCH/HR) = 6.18
 TOTAL STREAM AREA(ACRES) = 2.22
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.01

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	45.22	13.87	4.775	17.50
2	7.01	9.29	6.184	2.22

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.30	9.29	6.184
2	50.64	13.87	4.775

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 50.64 Tc(MIN.) = 13.87
 TOTAL AREA(ACRES) = 19.7
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2565.00 = 1905.00 FEET.

FLOW PROCESS FROM NODE 2565.00 TO NODE 2544.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1256.80 DOWNSTREAM(FEET) = 1256.00
 FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 24.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.05
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 50.64

```

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PIPE TRAVEL TIME(MIN.) = 0.06    Tc(MIN.) = 13.93
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2544.00 = 1950.00 FEET.

*****
FLOW PROCESS FROM NODE 2544.00 TO NODE 2544.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE 2553.00 TO NODE 2553.20 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1265.00
DOWNSTREAM ELEVATION(FEET) = 1263.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423
SUBAREA RUNOFF(CFS) = 0.42
TOTAL AREA(ACRES) = 0.11    TOTAL RUNOFF(CFS) = 0.42

*****
FLOW PROCESS FROM NODE 2553.20 TO NODE 2551.20 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1263.00    DOWNSTREAM ELEVATION(FEET) = 1261.00
STREET LENGTH(FEET) = 170.00    CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.40
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27

```

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 HALFSTREET FLOOD WIDTH(FEET) = 7.38
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.11
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.58
 STREET FLOW TRAVEL TIME(MIN.) = 1.34 Tc(MIN.) = 8.34
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.629
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
 SUBAREA AREA(ACRES) = 0.58 SUBAREA RUNOFF(CFS) = 1.96
 TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.33

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.37
 FLOW VELOCITY(FEET/SEC.) = 2.34 DEPTH*VELOCITY(FT*FT/SEC.) = 0.73
 LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2551.20 = 250.00 FEET.

FLOW PROCESS FROM NODE 2551.20 TO NODE 2552.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1255.00 DOWNSTREAM(FEET) = 1254.00
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.08
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.33
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 8.41
 LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2552.00 = 280.00 FEET.

FLOW PROCESS FROM NODE 2552.00 TO NODE 2545.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1254.00 DOWNSTREAM(FEET) = 1250.00
 FLOW LENGTH(FEET) = 325.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.96
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.33
 PIPE TRAVEL TIME(MIN.) = 1.09 Tc(MIN.) = 9.51
 LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2545.00 = 605.00 FEET.

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*****
FLOW PROCESS FROM NODE    2545.00 TO NODE    2545.00 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  1 ARE:
TIME OF CONCENTRATION(MIN.) =    9.51
RAINFALL INTENSITY(INCH/HR) =    6.09
TOTAL STREAM AREA(ACRES) =    0.69
PEAK FLOW RATE(CFS) AT CONFLUENCE =    2.33

*****
FLOW PROCESS FROM NODE    2551.00 TO NODE    2550.00 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
UPSTREAM ELEVATION(FEET) =    1262.00
DOWNSTREAM ELEVATION(FEET) =    1261.00
ELEVATION DIFFERENCE(FEET) =    1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.417
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.151
SUBAREA RUNOFF(CFS) =    0.47
TOTAL AREA(ACRES) =    0.13  TOTAL RUNOFF(CFS) =    0.47

*****
FLOW PROCESS FROM NODE    2550.00 TO NODE    2549.00 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1261.00  DOWNSTREAM ELEVATION(FEET) = 1257.00
STREET LENGTH(FEET) =   330.00  CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =  18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =    8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  1
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200
```


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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.34
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.34
HALFSTREET FLOOD WIDTH(FEET) = 10.84
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.58
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.89
STREET FLOW TRAVEL TIME(MIN.) = 2.13 Tc(MIN.) = 9.55
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.075
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
SUBAREA AREA(ACRES) = 1.84 SUBAREA RUNOFF(CFS) = 5.70
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 6.10

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.40 HALFSTREET FLOOD WIDTH(FEET) = 13.91
FLOW VELOCITY(FEET/SEC.) = 2.97 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
LONGEST FLOWPATH FROM NODE 2551.00 TO NODE 2549.00 = 395.00 FEET.

FLOW PROCESS FROM NODE 2549.00 TO NODE 2545.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1251.00 DOWNSTREAM(FEET) = 1250.00
FLOW LENGTH(FEET) = 10.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.80
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.10
PIPE TRAVEL TIME(MIN.) = 0.01 Tc(MIN.) = 9.56
LONGEST FLOWPATH FROM NODE 2551.00 TO NODE 2545.00 = 405.00 FEET.

FLOW PROCESS FROM NODE 2545.00 TO NODE 2545.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.56
RAINFALL INTENSITY(INCH/HR) = 6.07
TOTAL STREAM AREA(ACRES) = 1.97
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.10

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FLOW PROCESS FROM NODE 2548.00 TO NODE 2547.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 68.75
UPSTREAM ELEVATION(FEET) = 1265.00
DOWNSTREAM ELEVATION(FEET) = 1264.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.772
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.938
SUBAREA RUNOFF(CFS) = 0.67
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.67

FLOW PROCESS FROM NODE 2547.00 TO NODE 2546.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1258.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 410.00 CHANNEL SLOPE = 0.0146
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.879
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.42
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.00
AVERAGE FLOW DEPTH(FEET) = 0.46 TRAVEL TIME(MIN.) = 2.28
Tc(MIN.) = 10.05
SUBAREA AREA(ACRES) = 3.15 SUBAREA RUNOFF(CFS) = 9.44
AREA-AVERAGE RUNOFF COEFFICIENT = 0.510
TOTAL AREA(ACRES) = 3.3 PEAK FLOW RATE(CFS) = 10.01

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.64 FLOW VELOCITY(FEET/SEC.) = 3.63
LONGEST FLOWPATH FROM NODE 2548.00 TO NODE 2546.00 = 478.75 FEET.

FLOW PROCESS FROM NODE 2546.00 TO NODE 2545.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

P-25.TXT

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1252.00 DOWNSTREAM(FEET) = 1250.00
FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.74
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.01
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.11
LONGEST FLOWPATH FROM NODE 2548.00 TO NODE 2545.00 = 523.75 FEET.
```

FLOW PROCESS FROM NODE 2545.00 TO NODE 2545.00 IS CODE = 1

```
-----
>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
TIME OF CONCENTRATION(MIN.) = 10.11
RAINFALL INTENSITY(INCH/HR) = 5.86
TOTAL STREAM AREA(ACRES) = 3.34
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.01
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	2.33	9.51	6.093	0.69
2	6.10	9.56	6.071	1.97
3	10.01	10.11	5.855	3.34

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	17.82	9.51	6.093
2	17.90	9.56	6.071
3	18.14	10.11	5.855

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 18.14 Tc(MIN.) = 10.11
TOTAL AREA(ACRES) = 6.0
LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2545.00 = 605.00 FEET.
```

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FLOW PROCESS FROM NODE 2545.00 TO NODE 2544.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1250.00 DOWNSTREAM(FEET) = 1249.00
FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.17
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 18.14
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 10.22
LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2544.00 = 665.00 FEET.

FLOW PROCESS FROM NODE 2544.00 TO NODE 2544.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.14	10.22	5.815	6.00

LONGEST FLOWPATH FROM NODE 2553.00 TO NODE 2544.00 = 665.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	50.64	13.93	4.761	19.72

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2544.00 = 1950.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	55.29	10.22	5.815
2	65.49	13.93	4.761

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 65.49 Tc(MIN.) = 13.93
TOTAL AREA(ACRES) = 25.7

FLOW PROCESS FROM NODE 2544.00 TO NODE 2544.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<

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FLOW PROCESS FROM NODE 2544.00 TO NODE 2542.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1249.00 DOWNSTREAM(FEET) = 1248.00
FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 39.0 INCH PIPE IS 29.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.60
ESTIMATED PIPE DIAMETER(INCH) = 39.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 65.49
PIPE TRAVEL TIME(MIN.) = 0.22 Tc(MIN.) = 14.15
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2542.00 = 2075.00 FEET.

FLOW PROCESS FROM NODE 2542.00 TO NODE 2542.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.15
RAINFALL INTENSITY(INCH/HR) = 4.71
TOTAL STREAM AREA(ACRES) = 25.72
PEAK FLOW RATE(CFS) AT CONFLUENCE = 65.49

FLOW PROCESS FROM NODE 2543.00 TO NODE 2542.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1255.00
DOWNSTREAM ELEVATION(FEET) = 1254.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.417
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.151
SUBAREA RUNOFF(CFS) = 1.42
TOTAL AREA(ACRES) = 0.39 TOTAL RUNOFF(CFS) = 1.42

FLOW PROCESS FROM NODE 2542.00 TO NODE 2542.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.42
RAINFALL INTENSITY(INCH/HR) = 7.15
TOTAL STREAM AREA(ACRES) = 0.39
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.42
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	65.49	14.15	4.714	25.72
2	1.42	7.42	7.151	0.39

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	35.75	7.42	7.151
2	66.43	14.15	4.714

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 66.43   Tc(MIN.) = 14.15
TOTAL AREA(ACRES) = 26.1
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2542.00 = 2075.00 FEET.
```

FLOW PROCESS FROM NODE 2542.00 TO NODE 2515.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1254.00 DOWNSTREAM(FEET) = 1246.70
FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 26.92
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 66.43
PIPE TRAVEL TIME(MIN.) = 0.04   Tc(MIN.) = 14.19
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2515.00 = 2135.00 FEET.
```

FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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FLOW PROCESS FROM NODE 2541.00 TO NODE 2540.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1315.00
DOWNSTREAM ELEVATION(FEET) = 1310.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.105
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.66
TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 1.66

FLOW PROCESS FROM NODE 2540.00 TO NODE 2539.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1310.00 DOWNSTREAM ELEVATION(FEET) = 1285.00
STREET LENGTH(FEET) = 335.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.73
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.64
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.32
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.48
STREET FLOW TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 3.16
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

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*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.900

SUBAREA AREA(ACRES) = 0.50 SUBAREA RUNOFF(CFS) = 4.15

TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 5.81

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.30

FLOW VELOCITY(FEET/SEC.) = 5.91 DEPTH*VELOCITY(FT*FT/SEC.) = 1.84

LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2539.00 = 435.00 FEET.

FLOW PROCESS FROM NODE 2539.00 TO NODE 2538.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1279.00 DOWNSTREAM(FEET) = 1270.00

FLOW LENGTH(FEET) = 310.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 8.70

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 5.81

PIPE TRAVEL TIME(MIN.) = 0.59 Tc(MIN.) = 3.75

LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2538.00 = 745.00 FEET.

FLOW PROCESS FROM NODE 2538.00 TO NODE 2538.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 3.75

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 0.70

PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.81

FLOW PROCESS FROM NODE 2537.00 TO NODE 2536.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1285.00
DOWNSTREAM ELEVATION(FEET) = 1282.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.392
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.24
TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 1.24

FLOW PROCESS FROM NODE 2536.00 TO NODE 2538.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1282.00 DOWNSTREAM ELEVATION(FEET) = 1270.00
STREET LENGTH(FEET) = 210.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.56
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 6.78
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.43
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.16
STREET FLOW TRAVEL TIME(MIN.) = 0.79 Tc(MIN.) = 3.18
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.893
SUBAREA AREA(ACRES) = 0.32 SUBAREA RUNOFF(CFS) = 2.63
TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 3.87

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.24
FLOW VELOCITY(FEET/SEC.) = 4.86 DEPTH*VELOCITY(FT*FT/SEC.) = 1.41

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LONGEST FLOWPATH FROM NODE 2537.00 TO NODE 2538.00 = 305.00 FEET.

FLOW PROCESS FROM NODE 2538.00 TO NODE 2538.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 3.18

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 0.47

PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.87

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.81	3.75	9.222	0.70
2	3.87	3.18	9.222	0.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.80	3.18	9.222
2	9.68	3.75	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.68 Tc(MIN.) = 3.75

TOTAL AREA(ACRES) = 1.2

LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2538.00 = 745.00 FEET.

FLOW PROCESS FROM NODE 2538.00 TO NODE 2534.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1264.00 DOWNSTREAM(FEET) = 1250.00

FLOW LENGTH(FEET) = 480.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.7 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 9.94

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.68

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PIPE TRAVEL TIME(MIN.) = 0.80 Tc(MIN.) = 4.55
LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2534.00 = 1225.00 FEET.

FLOW PROCESS FROM NODE 2534.00 TO NODE 2534.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 4.55
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 1.17
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.68

FLOW PROCESS FROM NODE 2533.00 TO NODE 2532.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
UPSTREAM ELEVATION(FEET) = 1270.00
DOWNSTREAM ELEVATION(FEET) = 1265.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.720
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 3.00
TOTAL AREA(ACRES) = 0.37 TOTAL RUNOFF(CFS) = 3.00

FLOW PROCESS FROM NODE 2532.00 TO NODE 2534.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1265.00 DOWNSTREAM ELEVATION(FEET) = 1256.00
STREET LENGTH(FEET) = 375.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

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STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.30

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.39

HALFSTREET FLOOD WIDTH(FEET) = 13.03

AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.02

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.56

STREET FLOW TRAVEL TIME(MIN.) = 1.55 Tc(MIN.) = 3.27

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.880

SUBAREA AREA(ACRES) = 1.06 SUBAREA RUNOFF(CFS) = 8.60

TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 11.60

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.44 HALFSTREET FLOOD WIDTH(FEET) = 15.66

FLOW VELOCITY(FEET/SEC.) = 4.52 DEPTH*VELOCITY(FT*FT/SEC.) = 1.98

LONGEST FLOWPATH FROM NODE 2533.00 TO NODE 2534.00 = 445.00 FEET.

FLOW PROCESS FROM NODE 2534.00 TO NODE 2534.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 3.27

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 1.43

PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.60

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.68	4.55	9.222	1.17
2	11.60	3.27	9.222	1.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

P-25.TXT

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	21.29	3.27	9.222
2	21.29	4.55	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.29 Tc(MIN.) = 4.55
 TOTAL AREA(ACRES) = 2.6
 LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2534.00 = 1225.00 FEET.

FLOW PROCESS FROM NODE 2534.00 TO NODE 2527.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1250.00 DOWNSTREAM(FEET) = 1247.20
 FLOW LENGTH(FEET) = 460.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.55
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 21.29
 PIPE TRAVEL TIME(MIN.) = 1.17 Tc(MIN.) = 5.72
 LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2527.00 = 1685.00 FEET.

FLOW PROCESS FROM NODE 2527.00 TO NODE 2527.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 5.72
 RAINFALL INTENSITY(INCH/HR) = 8.45
 TOTAL STREAM AREA(ACRES) = 2.60
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.29

FLOW PROCESS FROM NODE 2526.00 TO NODE 2525.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5100
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
 UPSTREAM ELEVATION(FEET) = 1256.00
 DOWNSTREAM ELEVATION(FEET) = 1255.00

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ELEVATION DIFFERENCE(FEET) =      1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =      7.417
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.151
SUBAREA RUNOFF(CFS) =      1.06
TOTAL AREA(ACRES) =      0.29   TOTAL RUNOFF(CFS) =      1.06

*****
FLOW PROCESS FROM NODE   2525.00 TO NODE   2527.00 IS CODE =  62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1255.00  DOWNSTREAM ELEVATION(FEET) = 1253.20
STREET LENGTH(FEET) =   355.00   CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =  18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      2.15
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =   0.29
  HALFSTREET FLOOD WIDTH(FEET) =   7.97
  AVERAGE FLOW VELOCITY(FEET/SEC.) =   1.42
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   0.41
  STREET FLOW TRAVEL TIME(MIN.) =   4.16   Tc(MIN.) =   11.58
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.366
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5100
S.C.S. CURVE NUMBER (AMC II) =   0
AREA-AVERAGE RUNOFF COEFFICIENT =   0.510
SUBAREA AREA(ACRES) =   0.79   SUBAREA RUNOFF(CFS) =   2.16
TOTAL AREA(ACRES) =   1.1   PEAK FLOW RATE(CFS) =   2.96

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) =   9.24
FLOW VELOCITY(FEET/SEC.) =  1.52   DEPTH*VELOCITY(FT*FT/SEC.) =   0.47
LONGEST FLOWPATH FROM NODE   2526.00 TO NODE   2527.00 =   420.00 FEET.

*****
FLOW PROCESS FROM NODE   2527.00 TO NODE   2527.00 IS CODE =   1
-----

```

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.58
RAINFALL INTENSITY(INCH/HR) = 5.37
TOTAL STREAM AREA(ACRES) = 1.08
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.96
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.29	5.72	8.451	2.60
2	2.96	11.58	5.366	1.08

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.75	5.72	8.451
2	16.47	11.58	5.366

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.75 Tc(MIN.) = 5.72
 TOTAL AREA(ACRES) = 3.7
 LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2527.00 = 1685.00 FEET.

FLOW PROCESS FROM NODE 2527.00 TO NODE 2515.00 IS CODE = 31

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-----
>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1247.20 DOWNSTREAM(FEET) = 1246.70
FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.51
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 22.75
PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 5.81
LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2515.00 = 1730.00 FEET.
```

FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<

FLOW PROCESS FROM NODE 2523.00 TO NODE 2522.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00

UPSTREAM ELEVATION(FEET) = 1275.00

DOWNSTREAM ELEVATION(FEET) = 1274.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.766

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.54

TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 1.54

FLOW PROCESS FROM NODE 2522.00 TO NODE 2520.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1274.00 DOWNSTREAM ELEVATION(FEET) = 1260.00

STREET LENGTH(FEET) = 820.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.65

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31

HALFSTREET FLOOD WIDTH(FEET) = 9.37

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.83

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.89

STREET FLOW TRAVEL TIME(MIN.) = 4.82 Tc(MIN.) = 7.59

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.047

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*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.880

SUBAREA AREA(ACRES) = 1.30 SUBAREA RUNOFF(CFS) = 8.06

TOTAL AREA(ACRES) = 1.5 PEAK FLOW RATE(CFS) = 9.24

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.53

FLOW VELOCITY(FEET/SEC.) = 3.19 DEPTH*VELOCITY(FT*FT/SEC.) = 1.14

LONGEST FLOWPATH FROM NODE 2523.00 TO NODE 2520.00 = 885.00 FEET.

FLOW PROCESS FROM NODE 2520.00 TO NODE 2519.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1248.00 DOWNSTREAM(FEET) = 1247.20

FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 18.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 3.23

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.24

PIPE TRAVEL TIME(MIN.) = 2.65 Tc(MIN.) = 10.24

LONGEST FLOWPATH FROM NODE 2523.00 TO NODE 2519.00 = 1400.00 FEET.

FLOW PROCESS FROM NODE 2519.00 TO NODE 2519.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 10.24

RAINFALL INTENSITY(INCH/HR) = 5.81

TOTAL STREAM AREA(ACRES) = 1.49

PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.24

FLOW PROCESS FROM NODE 2518.00 TO NODE 2517.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 66.67

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UPSTREAM ELEVATION(FEET) = 1260.00
DOWNSTREAM ELEVATION(FEET) = 1259.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.825
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.05
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 1.05

FLOW PROCESS FROM NODE 2517.00 TO NODE 2519.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1259.00 DOWNSTREAM ELEVATION(FEET) = 1253.20
STREET LENGTH(FEET) = 510.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.55
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.31
HALFSTREET FLOOD WIDTH(FEET) = 9.30
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.31
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.72
STREET FLOW TRAVEL TIME(MIN.) = 3.68 Tc(MIN.) = 6.50
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.785
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
SUBAREA AREA(ACRES) = 1.01 SUBAREA RUNOFF(CFS) = 6.92
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 7.81

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.72
FLOW VELOCITY(FEET/SEC.) = 2.62 DEPTH*VELOCITY(FT*FT/SEC.) = 0.94
LONGEST FLOWPATH FROM NODE 2518.00 TO NODE 2519.00 = 576.67 FEET.

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FLOW PROCESS FROM NODE 2519.00 TO NODE 2519.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	6.50
RAINFALL INTENSITY(INCH/HR) =	7.79
TOTAL STREAM AREA(ACRES) =	1.14
PEAK FLOW RATE(CFS) AT CONFLUENCE =	7.81

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.24	10.24	5.807	1.49
2	7.81	6.50	7.785	1.14

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	13.68	6.50	7.785
2	15.07	10.24	5.807

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) =	15.07	Tc(MIN.) =	10.24
TOTAL AREA(ACRES) =	2.6		
LONGEST FLOWPATH FROM NODE 2523.00 TO NODE 2519.00 =	1400.00	FEET.	

FLOW PROCESS FROM NODE 2519.00 TO NODE 2515.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1247.20	DOWNSTREAM(FEET) =	1246.70
FLOW LENGTH(FEET) =	60.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS	15.8	INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.88		
ESTIMATED PIPE DIAMETER(INCH) =	24.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	15.07		
PIPE TRAVEL TIME(MIN.) =	0.15	Tc(MIN.) =	10.39
LONGEST FLOWPATH FROM NODE 2523.00 TO NODE 2515.00 =	1460.00	FEET.	

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FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	15.07	10.39	5.755	2.63

LONGEST FLOWPATH FROM NODE 2523.00 TO NODE 2515.00 = 1460.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.75	5.81	8.368	3.68

LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2515.00 = 1730.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	31.18	5.81	8.368
2	30.71	10.39	5.755

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 31.18 Tc(MIN.) = 5.81
TOTAL AREA(ACRES) = 6.3

FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	31.18	5.81	8.368	6.31

LONGEST FLOWPATH FROM NODE 2541.00 TO NODE 2515.00 = 1730.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM	RUNOFF	Tc	INTENSITY	AREA

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NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	66.43	14.19	4.706	26.11

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2515.00 = 2135.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	58.40	5.81	8.368
2	83.97	14.19	4.706

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 83.97 Tc(MIN.) = 14.19
 TOTAL AREA(ACRES) = 32.4

 FLOW PROCESS FROM NODE 2515.00 TO NODE 2515.00 IS CODE = 12

 >>>>CLEAR MEMORY BANK # 1 <<<<
 =====

 FLOW PROCESS FROM NODE 2515.00 TO NODE 2514.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1247.00 DOWNSTREAM(FEET) = 1139.00
 FLOW LENGTH(FEET) = 1060.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 26.67
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 83.97
 PIPE TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 14.85
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2514.00 = 3195.00 FEET.

 FLOW PROCESS FROM NODE 2514.00 TO NODE 2514.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 14.85
 RAINFALL INTENSITY(INCH/HR) = 4.57
 TOTAL STREAM AREA(ACRES) = 32.42
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 83.97

FLOW PROCESS FROM NODE 2513.00 TO NODE 2512.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1253.00

DOWNSTREAM ELEVATION(FEET) = 1250.00

ELEVATION DIFFERENCE(FEET) = 3.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.631

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.30

TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 1.30

FLOW PROCESS FROM NODE 2512.00 TO NODE 2514.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1250.00 DOWNSTREAM ELEVATION(FEET) = 1145.00

STREET LENGTH(FEET) = 945.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.99

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.26

HALFSTREET FLOOD WIDTH(FEET) = 6.71

AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.14

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.60

STREET FLOW TRAVEL TIME(MIN.) = 2.56 Tc(MIN.) = 5.19

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.997

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.880

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SUBAREA AREA(ACRES) = 1.43 SUBAREA RUNOFF(CFS) = 11.32
TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 12.59

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 8.84
FLOW VELOCITY(FEET/SEC.) = 7.00 DEPTH*VELOCITY(FT*FT/SEC.) = 2.12
LONGEST FLOWPATH FROM NODE 2513.00 TO NODE 2514.00 = 1040.00 FEET.

FLOW PROCESS FROM NODE 2514.00 TO NODE 2514.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.19
RAINFALL INTENSITY(INCH/HR) = 9.00
TOTAL STREAM AREA(ACRES) = 1.59
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.59

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	83.97	14.85	4.570	32.42
2	12.59	5.19	8.997	1.59

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	41.96	5.19	8.997
2	90.36	14.85	4.570

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 90.36 Tc(MIN.) = 14.85
TOTAL AREA(ACRES) = 34.0
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2514.00 = 3195.00 FEET.

FLOW PROCESS FROM NODE 2514.00 TO NODE 2510.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1139.00 DOWNSTREAM(FEET) = 1104.00

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                                P-25.TXT
FLOW LENGTH(FEET) = 290.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 28.99
ESTIMATED PIPE DIAMETER(INCH) = 27.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 90.36
PIPE TRAVEL TIME(MIN.) = 0.17  Tc(MIN.) = 15.02
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2510.00 = 3485.00 FEET.

*****
FLOW PROCESS FROM NODE 2510.00 TO NODE 2510.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.02
RAINFALL INTENSITY(INCH/HR) = 4.54
TOTAL STREAM AREA(ACRES) = 34.01
PEAK FLOW RATE(CFS) AT CONFLUENCE = 90.36

*****
FLOW PROCESS FROM NODE 2509.00 TO NODE 2508.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1142.00
DOWNSTREAM ELEVATION(FEET) = 1133.00
ELEVATION DIFFERENCE(FEET) = 9.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.824
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.05
TOTAL AREA(ACRES) = 0.13  TOTAL RUNOFF(CFS) = 1.05

*****
FLOW PROCESS FROM NODE 2508.00 TO NODE 2510.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1133.00  DOWNSTREAM ELEVATION(FEET) = 1110.00
STREET LENGTH(FEET) = 185.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.23
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.18
HALFSTREET FLOOD WIDTH(FEET) = 2.79
AVERAGE FLOW VELOCITY(FT/SEC.) = 5.69
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04
STREET FLOW TRAVEL TIME(MIN.) = 0.54 Tc(MIN.) = 2.37
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
SUBAREA AREA(ACRES) = 0.29 SUBAREA RUNOFF(CFS) = 2.35
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 3.41

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FT) = 0.21 HALFSTREET FLOOD WIDTH(FT) = 4.26
FLOW VELOCITY(FT/SEC.) = 5.69 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
LONGEST FLOWPATH FROM NODE 2509.00 TO NODE 2510.00 = 280.00 FEET.

FLOW PROCESS FROM NODE 2510.00 TO NODE 2510.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 2.37
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.42
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.41

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	90.36	15.02	4.537	34.01
2	3.41	2.37	9.222	0.42

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	47.86	2.37	9.222
2	92.04	15.02	4.537

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 92.04 T_c(MIN.) = 15.02

TOTAL AREA(ACRES) = 34.4

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2510.00 = 3485.00 FEET.

FLOW PROCESS FROM NODE 2510.00 TO NODE 2506.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1104.00 DOWNSTREAM(FEET) = 1075.00

FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 27.12

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 92.04

PIPE TRAVEL TIME(MIN.) = 0.18 T_c(MIN.) = 15.20

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2506.00 = 3785.00 FEET.

FLOW PROCESS FROM NODE 2506.00 TO NODE 2506.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 15.20

RAINFALL INTENSITY(INCH/HR) = 4.50

TOTAL STREAM AREA(ACRES) = 34.43

PEAK FLOW RATE(CFS) AT CONFLUENCE = 92.04

FLOW PROCESS FROM NODE 2505.00 TO NODE 2504.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1110.00
DOWNSTREAM ELEVATION(FEET) = 1095.00
ELEVATION DIFFERENCE(FEET) = 15.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.838
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.30
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 1.30

FLOW PROCESS FROM NODE 2504.00 TO NODE 2506.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1095.00 DOWNSTREAM ELEVATION(FEET) = 1075.00
STREET LENGTH(FEET) = 160.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.27
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.18
HALFSTREET FLOOD WIDTH(FEET) = 2.86
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.68
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04
STREET FLOW TRAVEL TIME(MIN.) = 0.47 Tc(MIN.) = 2.31
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
SUBAREA AREA(ACRES) = 0.24 SUBAREA RUNOFF(CFS) = 1.95
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 3.25

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END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.06

FLOW VELOCITY(FEET/SEC.) = 5.74 DEPTH*VELOCITY(FT*FT/SEC.) = 1.19

LONGEST FLOWPATH FROM NODE 2505.00 TO NODE 2506.00 = 260.00 FEET.

FLOW PROCESS FROM NODE 2506.00 TO NODE 2506.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 2.31

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 0.40

PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.25

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	92.04	15.20	4.501	34.43
2	3.25	2.31	9.222	0.40

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	48.17	2.31	9.222
2	93.62	15.20	4.501

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 93.62 Tc(MIN.) = 15.20

TOTAL AREA(ACRES) = 34.8

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2506.00 = 3785.00 FEET.

FLOW PROCESS FROM NODE 2506.00 TO NODE 2502.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1069.00 DOWNSTREAM(FEET) = 1034.00

FLOW LENGTH(FEET) = 190.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 34.74

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                                P-25.TXT
ESTIMATED PIPE DIAMETER(INCH) = 27.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 93.62
PIPE TRAVEL TIME(MIN.) = 0.09    Tc(MIN.) = 15.29
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2502.00 = 3975.00 FEET.

*****
FLOW PROCESS FROM NODE 2502.00 TO NODE 2502.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.29
RAINFALL INTENSITY(INCH/HR) = 4.48
TOTAL STREAM AREA(ACRES) = 34.83
PEAK FLOW RATE(CFS) AT CONFLUENCE = 93.62

*****
FLOW PROCESS FROM NODE 2501.00 TO NODE 2500.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1075.00
DOWNSTREAM ELEVATION(FEET) = 1062.00
ELEVATION DIFFERENCE(FEET) = 13.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.644
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.05
TOTAL AREA(ACRES) = 0.13    TOTAL RUNOFF(CFS) = 1.05

*****
FLOW PROCESS FROM NODE 2500.00 TO NODE 2502.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1062.00    DOWNSTREAM ELEVATION(FEET) = 1040.00
STREET LENGTH(FEET) = 190.00    CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020

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P-25.TXT
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
 SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.24
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(Feet) = 0.19
 HALFSTREET FLOOD WIDTH(Feet) = 2.99
 AVERAGE FLOW VELOCITY(Feet/Sec.) = 5.40
 PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 1.01
 STREET FLOW TRAVEL TIME(Min.) = 0.59 Tc(Min.) = 2.23
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8900
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.887
 SUBAREA AREA(ACRES) = 0.29 SUBAREA RUNOFF(CFS) = 2.38
 TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 3.44

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(Feet) = 0.21 HALFSTREET FLOOD WIDTH(Feet) = 4.39
 FLOW VELOCITY(Feet/Sec.) = 5.53 DEPTH*VELOCITY(Feet*Feet/Sec.) = 1.18
 LONGEST FLOWPATH FROM NODE 2501.00 TO NODE 2502.00 = 270.00 FEET.

FLOW PROCESS FROM NODE 2502.00 TO NODE 2502.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2				
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:				
TIME OF CONCENTRATION(Min.) = 2.23				
RAINFALL INTENSITY(INCH/HR) = 9.22				
TOTAL STREAM AREA(ACRES) = 0.42				
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.44				

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	93.62	15.29	4.484	34.83
2	3.44	2.23	9.222	0.42

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	48.96	2.23	9.222
2	95.29	15.29	4.484

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 95.29 Tc(MIN.) = 15.29

TOTAL AREA(ACRES) = 35.2

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2502.00 = 3975.00 FEET.

FLOW PROCESS FROM NODE 2502.00 TO NODE 2499.20 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1034.00 DOWNSTREAM(FEET) = 994.00

FLOW LENGTH(FEET) = 305.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 30.26

ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 95.29

PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 15.46

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2499.20 = 4280.00 FEET.

FLOW PROCESS FROM NODE 2499.20 TO NODE 2499.20 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 15.46

RAINFALL INTENSITY(INCH/HR) = 4.45

TOTAL STREAM AREA(ACRES) = 35.25

PEAK FLOW RATE(CFS) AT CONFLUENCE = 95.29

FLOW PROCESS FROM NODE 2499.60 TO NODE 2499.80 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1040.00
DOWNSTREAM ELEVATION(FEET) = 1022.00
ELEVATION DIFFERENCE(FEET) = 18.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.755
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 1.64
TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 1.64

FLOW PROCESS FROM NODE 2499.80 TO NODE 2499.20 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1022.00 DOWNSTREAM ELEVATION(FEET) = 1000.00
STREET LENGTH(FEET) = 185.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.75
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.20
HALFSTREET FLOOD WIDTH(FEET) = 3.66
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.46
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.09
STREET FLOW TRAVEL TIME(MIN.) = 0.57 Tc(MIN.) = 2.32
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .8900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.890
SUBAREA AREA(ACRES) = 0.27 SUBAREA RUNOFF(CFS) = 2.22
TOTAL AREA(ACRES) = 0.5 PEAK FLOW RATE(CFS) = 3.86

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.22 HALFSTREET FLOOD WIDTH(FEET) = 4.65

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FLOW VELOCITY(FEET/SEC.) = 5.76 DEPTH*VELOCITY(FT*FT/SEC.) = 1.26
LONGEST FLOWPATH FROM NODE 2499.60 TO NODE 2499.20 = 285.00 FEET.

FLOW PROCESS FROM NODE 2499.20 TO NODE 2499.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 2.32
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.47
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.86

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	95.29	15.46	4.453	35.25
2	3.86	2.32	9.222	0.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	49.87	2.32	9.222
2	97.15	15.46	4.453

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 97.15 Tc(MIN.) = 15.46
TOTAL AREA(ACRES) = 35.7
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2499.20 = 4280.00 FEET.

FLOW PROCESS FROM NODE 2499.20 TO NODE 2472.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 994.00 DOWNSTREAM(FEET) = 970.00
FLOW LENGTH(FEET) = 350.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 23.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 23.63
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 97.15

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                                P-25.TXT
PIPE TRAVEL TIME(MIN.) = 0.25    Tc(MIN.) = 15.71
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2472.00 = 4630.00 FEET.

*****
FLOW PROCESS FROM NODE 2472.00 TO NODE 2472.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE 2487.00 TO NODE 2486.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1405.00
DOWNSTREAM ELEVATION(FEET) = 1375.00
ELEVATION DIFFERENCE(FEET) = 30.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.50
TOTAL AREA(ACRES) = 0.27    TOTAL RUNOFF(CFS) = 0.50

*****
FLOW PROCESS FROM NODE 2486.00 TO NODE 2485.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1375.00    DOWNSTREAM(FEET) = 1294.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00    CHANNEL SLOPE = 0.2025
CHANNEL BASE(FEET) = 3.00    "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030    MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.710
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.34
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 6.15
AVERAGE FLOW DEPTH(FEET) = 0.16    TRAVEL TIME(MIN.) = 1.08
Tc(MIN.) = 8.19
SUBAREA AREA(ACRES) = 3.38    SUBAREA RUNOFF(CFS) = 5.67
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 3.7    PEAK FLOW RATE(CFS) = 6.12

```

P-25.TXT

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.23 FLOW VELOCITY(FEET/SEC.) = 7.63

LONGEST FLOWPATH FROM NODE 2487.00 TO NODE 2485.00 = 500.00 FEET.

FLOW PROCESS FROM NODE 2485.00 TO NODE 2485.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 8.19

RAINFALL INTENSITY(INCH/HR) = 6.71

TOTAL STREAM AREA(ACRES) = 3.65

PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.12

FLOW PROCESS FROM NODE 2484.00 TO NODE 2483.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00

UPSTREAM ELEVATION(FEET) = 1325.00

DOWNSTREAM ELEVATION(FEET) = 1320.00

ELEVATION DIFFERENCE(FEET) = 5.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.574

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.513

SUBAREA RUNOFF(CFS) = 0.41

TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 2483.00 TO NODE 2485.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1320.00 DOWNSTREAM(FEET) = 1294.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 205.00 CHANNEL SLOPE = 0.1268

NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION

NOTE: CHANNEL SLOPE OF .1 WAS ASSUMED IN VELOCITY ESTIMATION

CHANNEL FLOW THRU SUBAREA(CFS) = 0.41

FLOW VELOCITY(FEET/SEC) = 4.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 9.29

LONGEST FLOWPATH FROM NODE 2484.00 TO NODE 2485.00 = 300.00 FEET.

P-25.TXT

FLOW PROCESS FROM NODE 2485.00 TO NODE 2485.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.29
 RAINFALL INTENSITY(INCH/HR) = 6.18
 TOTAL STREAM AREA(ACRES) = 0.25
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.41

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.12	8.19	6.710	3.65
2	0.41	9.29	6.182	0.25

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	6.48	8.19	6.710
2	6.05	9.29	6.182

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 6.48 Tc(MIN.) = 8.19
 TOTAL AREA(ACRES) = 3.9
 LONGEST FLOWPATH FROM NODE 2487.00 TO NODE 2485.00 = 500.00 FEET.

FLOW PROCESS FROM NODE 2485.00 TO NODE 2482.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1288.00 DOWNSTREAM(FEET) = 1251.00
 FLOW LENGTH(FEET) = 95.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 22.78
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.48
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 8.26

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LONGEST FLOWPATH FROM NODE 2487.00 TO NODE 2482.00 = 595.00 FEET.

FLOW PROCESS FROM NODE 2482.00 TO NODE 2482.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	8.26
RAINFALL INTENSITY(INCH/HR) =	6.67
TOTAL STREAM AREA(ACRES) =	3.90
PEAK FLOW RATE(CFS) AT CONFLUENCE =	6.48

FLOW PROCESS FROM NODE 2481.00 TO NODE 2480.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.2500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(Feet) =	80.00
UPSTREAM ELEVATION(Feet) =	1270.00
DOWNSTREAM ELEVATION(Feet) =	1268.00
ELEVATION DIFFERENCE(Feet) =	2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	10.083
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.866
SUBAREA RUNOFF(CFS) =	0.18
TOTAL AREA(ACRES) =	0.12
TOTAL RUNOFF(CFS) =	0.18

FLOW PROCESS FROM NODE 2480.00 TO NODE 2482.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) =	1268.00	DOWNSTREAM(Feet) =	1257.00
CHANNEL LENGTH THRU SUBAREA(Feet) =	425.00	CHANNEL SLOPE =	0.0259
CHANNEL BASE(Feet) =	3.00	"Z" FACTOR =	2.000
MANNING'S FACTOR =	0.030	MAXIMUM DEPTH(Feet) =	10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	4.866		

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.2500
S.C.S. CURVE NUMBER (AMC II) =	0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =	1.08
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) =	2.09
AVERAGE FLOW DEPTH(Feet) =	0.16
TRAVEL TIME(MIN.) =	3.39

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Tc(MIN.) = 13.47
 SUBAREA AREA(ACRES) = 1.46 SUBAREA RUNOFF(CFS) = 1.78
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
 TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 1.92

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.22 FLOW VELOCITY(FEET/SEC.) = 2.59
 LONGEST FLOWPATH FROM NODE 2481.00 TO NODE 2482.00 = 505.00 FEET.

FLOW PROCESS FROM NODE 2482.00 TO NODE 2482.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 13.47
 RAINFALL INTENSITY(INCH/HR) = 4.87
 TOTAL STREAM AREA(ACRES) = 1.58
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.92

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.48	8.26	6.674	3.90
2	1.92	13.47	4.866	1.58

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.66	8.26	6.674
2	6.65	13.47	4.866

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 7.66 Tc(MIN.) = 8.26
 TOTAL AREA(ACRES) = 5.5
 LONGEST FLOWPATH FROM NODE 2487.00 TO NODE 2482.00 = 595.00 FEET.

FLOW PROCESS FROM NODE 2482.00 TO NODE 2478.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

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ELEVATION DATA: UPSTREAM(FEET) = 1251.00 DOWNSTREAM(FEET) = 1247.00
 FLOW LENGTH(FEET) = 430.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.04
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.66
 PIPE TRAVEL TIME(MIN.) = 1.19 Tc(MIN.) = 9.44
 LONGEST FLOWPATH FROM NODE 2487.00 TO NODE 2478.00 = 1025.00 FEET.

FLOW PROCESS FROM NODE 2478.00 TO NODE 2478.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.44
 RAINFALL INTENSITY(INCH/HR) = 6.12
 TOTAL STREAM AREA(ACRES) = 5.48
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.66

FLOW PROCESS FROM NODE 2477.00 TO NODE 2476.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1300.00
 DOWNSTREAM ELEVATION(FEET) = 1298.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 10.083
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.866
 SUBAREA RUNOFF(CFS) = 0.15
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.15

FLOW PROCESS FROM NODE 2476.00 TO NODE 2475.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1298.00 DOWNSTREAM(FEET) = 1268.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 410.00 CHANNEL SLOPE = 0.0732
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.915
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.44
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.15
 AVERAGE FLOW DEPTH(FEET) = 0.07 TRAVEL TIME(MIN.) = 3.18
 Tc(MIN.) = 13.26
 SUBAREA AREA(ACRES) = 0.48 SUBAREA RUNOFF(CFS) = 0.59
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
 TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 0.71

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.09 FLOW VELOCITY(FEET/SEC.) = 2.53
 LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2475.00 = 490.00 FEET.

FLOW PROCESS FROM NODE 2475.00 TO NODE 2478.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1262.00 DOWNSTREAM(FEET) = 1247.00
 FLOW LENGTH(FEET) = 995.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 3.77
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 0.71
 PIPE TRAVEL TIME(MIN.) = 4.40 Tc(MIN.) = 17.66
 LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2478.00 = 1485.00 FEET.

FLOW PROCESS FROM NODE 2478.00 TO NODE 2478.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 17.66
 RAINFALL INTENSITY(INCH/HR) = 4.09
 TOTAL STREAM AREA(ACRES) = 0.58
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.71

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

			P-25.TXT	
1	7.66	9.44	6.119	5.48
2	0.71	17.66	4.086	0.58

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.04	9.44	6.119
2	5.83	17.66	4.086

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.04 Tc(MIN.) = 9.44

TOTAL AREA(ACRES) = 6.1

LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2478.00 = 1485.00 FEET.

FLOW PROCESS FROM NODE 2478.00 TO NODE 2515.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1247.00 DOWNSTREAM(FEET) = 1246.00

FLOW LENGTH(FEET) = 130.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 5.61

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 8.04

PIPE TRAVEL TIME(MIN.) = 0.39 Tc(MIN.) = 9.83

LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2515.60 = 1615.00 FEET.

FLOW PROCESS FROM NODE 2515.60 TO NODE 2515.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.83

RAINFALL INTENSITY(INCH/HR) = 5.96

TOTAL STREAM AREA(ACRES) = 6.06

PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.04

FLOW PROCESS FROM NODE 2515.80 TO NODE 2515.70 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1254.00
DOWNSTREAM ELEVATION(FEET) = 1253.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 10.685
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.650
SUBAREA RUNOFF(CFS) = 0.34
TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.34

*****
FLOW PROCESS FROM NODE 2515.70 TO NODE 2515.60 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1253.00 DOWNSTREAM(FEET) = 1252.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 510.00 CHANNEL SLOPE = 0.0020
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.982
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.99
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.10
AVERAGE FLOW DEPTH(FEET) = 0.46 TRAVEL TIME(MIN.) = 7.70
Tc(MIN.) = 18.38
SUBAREA AREA(ACRES) = 3.25 SUBAREA RUNOFF(CFS) = 3.24
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 3.47

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.63 FLOW VELOCITY(FEET/SEC.) = 1.30
LONGEST FLOWPATH FROM NODE 2515.80 TO NODE 2515.60 = 575.00 FEET.

*****
FLOW PROCESS FROM NODE 2515.60 TO NODE 2515.60 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 18.38

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RAINFALL INTENSITY(INCH/HR) = 3.98
TOTAL STREAM AREA(ACRES) = 3.49
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.47

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.04	9.83	5.963	6.06
2	3.47	18.38	3.982	3.49

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	9.90	9.83	5.963
2	8.84	18.38	3.982

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.90 Tc(MIN.) = 9.83
TOTAL AREA(ACRES) = 9.6
LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2515.60 = 1615.00 FEET.

FLOW PROCESS FROM NODE 2515.60 TO NODE 2474.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1246.00	DOWNSTREAM(FEET) =	1244.00
FLOW LENGTH(FEET) =	50.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO	18.000		
DEPTH OF FLOW IN 18.0 INCH PIPE IS	9.0 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	11.26		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	9.90		
PIPE TRAVEL TIME(MIN.) =	0.07	Tc(MIN.) =	9.90
LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2474.00 =	1665.00 FEET.		

FLOW PROCESS FROM NODE 2474.00 TO NODE 2473.50 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1244.00	DOWNSTREAM(FEET) =	978.50
CHANNEL LENGTH THRU SUBAREA(FEET) =	955.00	CHANNEL SLOPE =	0.2780

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CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.465
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 17.07
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 11.79
AVERAGE FLOW DEPTH(Feet) = 0.38 TRAVEL TIME(Min.) = 1.35
Tc(Min.) = 11.25
SUBAREA AREA(ACRES) = 10.53 SUBAREA RUNOFF(CFS) = 14.39
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 20.1 PEAK FLOW RATE(CFS) = 27.43

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(Feet) = 0.50 FLOW VELOCITY(Feet/Sec.) = 13.76
LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2473.50 = 2620.00 FEET.

FLOW PROCESS FROM NODE 2473.50 TO NODE 2473.50 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(Min.) = 11.25
RAINFALL INTENSITY(INCH/HR) = 5.46
TOTAL STREAM AREA(ACRES) = 20.08
PEAK FLOW RATE(CFS) AT CONFLUENCE = 27.43

FLOW PROCESS FROM NODE 2488.00 TO NODE 2473.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 100.00
UPSTREAM ELEVATION(Feet) = 1250.00
DOWNSTREAM ELEVATION(Feet) = 1200.00
ELEVATION DIFFERENCE(Feet) = 50.00
SUBAREA OVERLAND TIME OF FLOW(Min.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.92
TOTAL AREA(ACRES) = 0.50 TOTAL RUNOFF(CFS) = 0.92

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FLOW PROCESS FROM NODE 2473.00 TO NODE 2473.50 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1200.00 DOWNSTREAM(FEET) = 978.50

CHANNEL LENGTH THRU SUBAREA(FEET) = 930.00 CHANNEL SLOPE = 0.2382

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.467

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2700

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 11.43

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 9.91

AVERAGE FLOW DEPTH(FEET) = 0.32 TRAVEL TIME(MIN.) = 1.56

Tc(MIN.) = 8.67

SUBAREA AREA(ACRES) = 12.02 SUBAREA RUNOFF(CFS) = 20.99

AREA-AVERAGE RUNOFF COEFFICIENT = 0.269

TOTAL AREA(ACRES) = 12.5 PEAK FLOW RATE(CFS) = 21.80

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.46 FLOW VELOCITY(FEET/SEC.) = 12.07

LONGEST FLOWPATH FROM NODE 2488.00 TO NODE 2473.50 = 1030.00 FEET.

FLOW PROCESS FROM NODE 2473.50 TO NODE 2473.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 8.67

RAINFALL INTENSITY(INCH/HR) = 6.47

TOTAL STREAM AREA(ACRES) = 12.52

PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.80

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	27.43	11.25	5.465	20.08
2	21.80	8.67	6.467	12.52

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

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** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	44.98	8.67	6.467
2	45.85	11.25	5.465

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 45.85 Tc(MIN.) = 11.25
 TOTAL AREA(ACRES) = 32.6
 LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2473.50 = 2620.00 FEET.

FLOW PROCESS FROM NODE 2473.50 TO NODE 2472.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 978.50 DOWNSTREAM(FEET) = 976.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 410.00 CHANNEL SLOPE = 0.0061
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.010
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2900
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 55.56
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.21
 AVERAGE FLOW DEPTH(FEET) = 1.93 TRAVEL TIME(MIN.) = 1.62
 Tc(MIN.) = 12.88
 SUBAREA AREA(ACRES) = 13.37 SUBAREA RUNOFF(CFS) = 19.43
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.267
 TOTAL AREA(ACRES) = 46.0 PEAK FLOW RATE(CFS) = 61.46

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 2.02 FLOW VELOCITY(FEET/SEC.) = 4.33
 LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2472.00 = 3030.00 FEET.

FLOW PROCESS FROM NODE 2472.00 TO NODE 2472.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	61.46	12.88	5.010	45.97

LONGEST FLOWPATH FROM NODE 2477.00 TO NODE 2472.00 = 3030.00 FEET.

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** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	97.15	15.71	4.407	35.72

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2472.00 = 4630.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	141.10	12.88	5.010
2	151.22	15.71	4.407

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 151.22 Tc(MIN.) = 15.71
TOTAL AREA(ACRES) = 81.7

FLOW PROCESS FROM NODE 2472.00 TO NODE 2472.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2472.00 TO NODE 2471.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 970.00 DOWNSTREAM(FEET) = 920.00
FLOW LENGTH(FEET) = 385.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 23.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 34.08
ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 151.22
PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 15.89
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2471.00 = 5015.00 FEET.

FLOW PROCESS FROM NODE 2471.00 TO NODE 2471.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.89
RAINFALL INTENSITY(INCH/HR) = 4.37
TOTAL STREAM AREA(ACRES) = 81.69

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PEAK FLOW RATE(CFS) AT CONFLUENCE =    151.22

*****
FLOW PROCESS FROM NODE    2470.00 TO NODE    2469.00 IS CODE =    21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =   100.00
UPSTREAM ELEVATION(FEET) =   1030.00
DOWNSTREAM ELEVATION(FEET) =   1024.00
ELEVATION DIFFERENCE(FEET) =     6.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    8.420
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.589
SUBAREA RUNOFF(CFS) =     0.97
TOTAL AREA(ACRES) =     0.59  TOTAL RUNOFF(CFS) =     0.97

*****
FLOW PROCESS FROM NODE    2469.00 TO NODE    2471.00 IS CODE =    51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =   1024.00  DOWNSTREAM(FEET) =   934.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   925.00  CHANNEL SLOPE =   0.0973
CHANNEL BASE(FEET) =    3.00  "Z" FACTOR =   2.000
MANNING'S FACTOR = 0.030  MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.139
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) =    0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =     1.82
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   3.89
AVERAGE FLOW DEPTH(FEET) =    0.14  TRAVEL TIME(MIN.) =   3.96
Tc(MIN.) =   12.38
SUBAREA AREA(ACRES) =    1.30  SUBAREA RUNOFF(CFS) =    1.67
AREA-AVERAGE RUNOFF COEFFICIENT =  0.250
TOTAL AREA(ACRES) =    1.9  PEAK FLOW RATE(CFS) =    2.43

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.16  FLOW VELOCITY(FEET/SEC.) =   4.42
LONGEST FLOWPATH FROM NODE    2470.00 TO NODE    2471.00 =   1025.00 FEET.

*****
FLOW PROCESS FROM NODE    2471.00 TO NODE    2471.00 IS CODE =    1
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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 12.38
RAINFALL INTENSITY(INCH/HR) = 5.14
TOTAL STREAM AREA(ACRES) = 1.89
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.43
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	151.22	15.89	4.374	81.69
2	2.43	12.38	5.139	1.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	120.21	12.38	5.139
2	153.29	15.89	4.374

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 153.29 Tc(MIN.) = 15.89
 TOTAL AREA(ACRES) = 83.6
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2471.00 = 5015.00 FEET.

FLOW PROCESS FROM NODE 2471.00 TO NODE 2459.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
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=====
ELEVATION DATA: UPSTREAM(Feet) = 928.00 DOWNSTREAM(Feet) = 914.00
FLOW LENGTH(Feet) = 200.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 27.1 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 26.86
ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 153.29
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 16.02
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2459.00 = 5215.00 FEET.
```

FLOW PROCESS FROM NODE 2459.00 TO NODE 2459.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 2468.00 TO NODE 2467.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1255.00

DOWNSTREAM ELEVATION(FEET) = 1197.00

ELEVATION DIFFERENCE(FEET) = 58.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.66

TOTAL AREA(ACRES) = 0.36 TOTAL RUNOFF(CFS) = 0.66

FLOW PROCESS FROM NODE 2467.00 TO NODE 2460.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1197.00 DOWNSTREAM(FEET) = 923.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1265.00 CHANNEL SLOPE = 0.2166

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.855

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.44

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 7.01

AVERAGE FLOW DEPTH(FEET) = 0.19 TRAVEL TIME(MIN.) = 3.01

Tc(MIN.) = 10.11

SUBAREA AREA(ACRES) = 5.11 SUBAREA RUNOFF(CFS) = 7.48

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 5.5 PEAK FLOW RATE(CFS) = 8.01

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.26 FLOW VELOCITY(FEET/SEC.) = 8.59

LONGEST FLOWPATH FROM NODE 2468.00 TO NODE 2460.00 = 1365.00 FEET.

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FLOW PROCESS FROM NODE 2460.00 TO NODE 2460.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2465.00 TO NODE 2464.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1225.00

DOWNSTREAM ELEVATION(FEET) = 1215.00

ELEVATION DIFFERENCE(FEET) = 10.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.83

TOTAL AREA(ACRES) = 0.45 TOTAL RUNOFF(CFS) = 0.83

FLOW PROCESS FROM NODE 2464.00 TO NODE 2463.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1215.00 DOWNSTREAM(FEET) = 912.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 2135.00 CHANNEL SLOPE = 0.1419

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.112

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.71

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 6.62

AVERAGE FLOW DEPTH(FEET) = 0.25 TRAVEL TIME(MIN.) = 5.38

Tc(MIN.) = 12.48

SUBAREA AREA(ACRES) = 7.44 SUBAREA RUNOFF(CFS) = 9.51

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 7.9 PEAK FLOW RATE(CFS) = 10.08

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.34 FLOW VELOCITY(FEET/SEC.) = 8.05

LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2463.00 = 2235.00 FEET.

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FLOW PROCESS FROM NODE 2463.00 TO NODE 2463.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	12.48
RAINFALL INTENSITY(INCH/HR) =	5.11
TOTAL STREAM AREA(ACRES) =	7.89
PEAK FLOW RATE(CFS) AT CONFLUENCE =	10.08

FLOW PROCESS FROM NODE 2462.00 TO NODE 2461.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.5700
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	80.00
UPSTREAM ELEVATION(FEET) =	925.00
DOWNSTREAM ELEVATION(FEET) =	923.00
ELEVATION DIFFERENCE(FEET) =	2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.287
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.955
SUBAREA RUNOFF(CFS) =	0.50
TOTAL AREA(ACRES) =	0.11
TOTAL RUNOFF(CFS) =	0.50

FLOW PROCESS FROM NODE 2461.00 TO NODE 2463.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	923.00	DOWNSTREAM ELEVATION(FEET) =	916.00
STREET LENGTH(FEET) =	590.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =	0.0200

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.20
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.34
 HALFSTREET FLOOD WIDTH(FEET) = 10.53
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.52
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.85
 STREET FLOW TRAVEL TIME(MIN.) = 3.89 Tc(MIN.) = 10.18
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.829
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 3.38 SUBAREA RUNOFF(CFS) = 11.23
 TOTAL AREA(ACRES) = 3.5 PEAK FLOW RATE(CFS) = 11.60

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.40 HALFSTREET FLOOD WIDTH(FEET) = 13.66
 FLOW VELOCITY(FEET/SEC.) = 2.92 DEPTH*VELOCITY(FT*FT/SEC.) = 1.17
 LONGEST FLOWPATH FROM NODE 2462.00 TO NODE 2463.00 = 670.00 FEET.

FLOW PROCESS FROM NODE 2463.00 TO NODE 2463.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.18
 RAINFALL INTENSITY(INCH/HR) = 5.83
 TOTAL STREAM AREA(ACRES) = 3.49
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.60

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.08	12.48	5.112	7.89
2	11.60	10.18	5.829	3.49

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.82	10.18	5.829
2	20.25	12.48	5.112

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.25 Tc(MIN.) = 12.48

TOTAL AREA(ACRES) = 11.4

LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2463.00 = 2235.00 FEET.

FLOW PROCESS FROM NODE 2463.00 TO NODE 2460.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 913.00 DOWNSTREAM(FEET) = 912.00

FLOW LENGTH(FEET) = 225.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 19.9 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 5.84

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.25

PIPE TRAVEL TIME(MIN.) = 0.64 Tc(MIN.) = 13.12

LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2460.00 = 2460.00 FEET.

FLOW PROCESS FROM NODE 2460.00 TO NODE 2460.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.25	13.12	4.949	11.38

LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2460.00 = 2460.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.01	10.11	5.855	5.47

LONGEST FLOWPATH FROM NODE 2468.00 TO NODE 2460.00 = 1365.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	23.61	10.11	5.855
2	27.02	13.12	4.949

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 27.02 Tc(MIN.) = 13.12

TOTAL AREA(ACRES) = 16.9

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FLOW PROCESS FROM NODE 2460.00 TO NODE 2460.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

FLOW PROCESS FROM NODE 2460.00 TO NODE 2459.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 912.00 DOWNSTREAM(FEET) = 911.00
FLOW LENGTH(FEET) = 145.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.37
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 27.02
PIPE TRAVEL TIME(MIN.) = 0.33 Tc(MIN.) = 13.45
LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2459.00 = 2605.00 FEET.

FLOW PROCESS FROM NODE 2459.00 TO NODE 2459.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	27.02	13.45	4.871	16.85

LONGEST FLOWPATH FROM NODE 2465.00 TO NODE 2459.00 = 2605.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	153.29	16.02	4.352	83.58

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2459.00 = 5215.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	155.73	13.45	4.871
2	177.43	16.02	4.352

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 177.43 Tc(MIN.) = 16.02

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TOTAL AREA(ACRES) = 100.4

FLOW PROCESS FROM NODE 2459.00 TO NODE 2459.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 2459.00 TO NODE 2458.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 911.00 DOWNSTREAM(FEET) = 905.00
FLOW LENGTH(FEET) = 635.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 54.0 INCH PIPE IS 43.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.00
ESTIMATED PIPE DIAMETER(INCH) = 54.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 177.43
PIPE TRAVEL TIME(MIN.) = 0.81 Tc(MIN.) = 16.83
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2458.00 = 5850.00 FEET.

FLOW PROCESS FROM NODE 2458.00 TO NODE 2458.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 2457.00 TO NODE 2456.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 920.00
DOWNSTREAM ELEVATION(FEET) = 917.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914
SUBAREA RUNOFF(CFS) = 0.86
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.86

FLOW PROCESS FROM NODE 2456.00 TO NODE 2456.10 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<
 =====

UPSTREAM ELEVATION(FEET) = 917.00 DOWNSTREAM ELEVATION(FEET) = 910.00
 STREET LENGTH(FEET) = 355.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.77
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.35
 HALFSTREET FLOOD WIDTH(FEET) = 11.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.39
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.20
 STREET FLOW TRAVEL TIME(MIN.) = 1.74 Tc(MIN.) = 8.08
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.765
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 2.02 SUBAREA RUNOFF(CFS) = 7.79
 TOTAL AREA(ACRES) = 2.2 PEAK FLOW RATE(CFS) = 8.52

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.41 HALFSTREET FLOOD WIDTH(FEET) = 14.41
 FLOW VELOCITY(FEET/SEC.) = 3.89 DEPTH*VELOCITY(FT*FT/SEC.) = 1.61
 LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2456.10 = 450.00 FEET.

 FLOW PROCESS FROM NODE 2456.10 TO NODE 2455.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 904.00 DOWNSTREAM(FEET) = 897.00
 FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.86

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ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.52
PIPE TRAVEL TIME(MIN.) = 0.56    Tc(MIN.) = 8.65
LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2455.00 = 750.00 FEET.

*****
FLOW PROCESS FROM NODE 2455.00 TO NODE 2455.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.65
RAINFALL INTENSITY(INCH/HR) = 6.48
TOTAL STREAM AREA(ACRES) = 2.21
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.52

*****
FLOW PROCESS FROM NODE 2456.20 TO NODE 2456.30 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 912.00
DOWNSTREAM ELEVATION(FEET) = 909.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.059
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.147
SUBAREA RUNOFF(CFS) = 0.42
TOTAL AREA(ACRES) = 0.09    TOTAL RUNOFF(CFS) = 0.42

*****
FLOW PROCESS FROM NODE 2456.30 TO NODE 2455.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 909.00    DOWNSTREAM ELEVATION(FEET) = 903.00
STREET LENGTH(FEET) = 245.00    CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

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SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 10.05
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.35
HALFSTREET FLOOD WIDTH(Feet) = 11.09
AVERAGE FLOW VELOCITY(Feet/Sec.) = 3.73
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.30
STREET FLOW TRAVEL TIME(MIN.) = 1.10 Tc(MIN.) = 7.15
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.319
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 4.61 SUBAREA RUNOFF(CFS) = 19.23
TOTAL AREA(ACRES) = 4.7 PEAK FLOW RATE(CFS) = 19.61

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.42 HALFSTREET FLOOD WIDTH(Feet) = 14.59
FLOW VELOCITY(Feet/Sec.) = 4.36 DEPTH*VELOCITY(FT*FT/SEC.) = 1.82
LONGEST FLOWPATH FROM NODE 2456.20 TO NODE 2455.00 = 335.00 FEET.

FLOW PROCESS FROM NODE 2455.00 TO NODE 2455.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.15
RAINFALL INTENSITY(INCH/HR) = 7.32
TOTAL STREAM AREA(ACRES) = 4.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 19.61

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.52	8.65	6.477	2.21
2	19.61	7.15	7.319	4.70

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.66	7.15	7.319
2	25.87	8.65	6.477

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.66 Tc(MIN.) = 7.15
 TOTAL AREA(ACRES) = 6.9
 LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2455.00 = 750.00 FEET.

FLOW PROCESS FROM NODE 2455.00 TO NODE 2454.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 897.00 DOWNSTREAM(FEET) = 896.00
 FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.05
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 26.66
 PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 7.53
 LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2454.00 = 910.00 FEET.

FLOW PROCESS FROM NODE 2454.00 TO NODE 2453.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 902.00 DOWNSTREAM(FEET) = 901.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 35.00 CHANNEL SLOPE = 0.0286
 CHANNEL FLOW THRU SUBAREA(CFS) = 26.66
 FLOW VELOCITY(FEET/SEC) = 5.48 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 7.64
 LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2453.00 = 945.00 FEET.

FLOW PROCESS FROM NODE 2453.00 TO NODE 2458.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 901.00 DOWNSTREAM(FEET) = 900.00
 FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 36.0 INCH PIPE IS 28.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.49

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ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 26.66
 PIPE TRAVEL TIME(MIN.) = 1.91 Tc(MIN.) = 9.55
 LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2458.00 = 1460.00 FEET.

FLOW PROCESS FROM NODE 2458.00 TO NODE 2458.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.66	9.55	6.075	6.91

LONGEST FLOWPATH FROM NODE 2457.00 TO NODE 2458.00 = 1460.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	177.43	16.83	4.215	100.43

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2458.00 = 5850.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	127.32	9.55	6.075
2	195.92	16.83	4.215

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 195.92 Tc(MIN.) = 16.83
 TOTAL AREA(ACRES) = 107.3

FLOW PROCESS FROM NODE 2458.00 TO NODE 2458.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2458.00 TO NODE 2452.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 902.00 DOWNSTREAM(FEET) = 896.00
 FLOW LENGTH(FEET) = 315.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 51.0 INCH PIPE IS 37.3 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 17.60
 ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 195.92
 PIPE TRAVEL TIME(MIN.) = 0.30 Tc(MIN.) = 17.13
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2452.00 = 6165.00 FEET.

FLOW PROCESS FROM NODE 2452.00 TO NODE 2452.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 17.13
 RAINFALL INTENSITY(INCH/HR) = 4.17
 TOTAL STREAM AREA(ACRES) = 107.34
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 195.92

FLOW PROCESS FROM NODE 2451.00 TO NODE 2450.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1185.00
 DOWNSTREAM ELEVATION(FEET) = 1150.00
 ELEVATION DIFFERENCE(FEET) = 35.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
 SUBAREA RUNOFF(CFS) = 0.50
 TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 2450.00 TO NODE 2449.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1150.00 DOWNSTREAM(FEET) = 960.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 615.00 CHANNEL SLOPE = 0.3089
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.751
 *USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 9.49
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 10.18
 AVERAGE FLOW DEPTH(FEET) = 0.26 TRAVEL TIME(MIN.) = 1.01
 Tc(MIN.) = 8.11
 SUBAREA AREA(ACRES) = 10.64 SUBAREA RUNOFF(CFS) = 17.96
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
 TOTAL AREA(ACRES) = 10.9 PEAK FLOW RATE(CFS) = 18.41

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.39 FLOW VELOCITY(FEET/SEC.) = 12.64
 LONGEST FLOWPATH FROM NODE 2451.00 TO NODE 2449.00 = 715.00 FEET.

FLOW PROCESS FROM NODE 2449.00 TO NODE 2452.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 954.00 DOWNSTREAM(FEET) = 896.00
 FLOW LENGTH(FEET) = 820.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 16.20
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 18.41
 PIPE TRAVEL TIME(MIN.) = 0.84 Tc(MIN.) = 8.95
 LONGEST FLOWPATH FROM NODE 2451.00 TO NODE 2452.00 = 1535.00 FEET.

FLOW PROCESS FROM NODE 2452.00 TO NODE 2452.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.95
 RAINFALL INTENSITY(INCH/HR) = 6.33
 TOTAL STREAM AREA(ACRES) = 10.91
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 18.41

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	195.92	17.13	4.167	107.34
2	18.41	8.95	6.334	10.91

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RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	120.79	8.95	6.334
2	208.04	17.13	4.167

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 208.04 Tc(MIN.) = 17.13

TOTAL AREA(ACRES) = 118.2

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2452.00 = 6165.00 FEET.

FLOW PROCESS FROM NODE 2452.00 TO NODE 2448.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 896.00 DOWNSTREAM(FEET) = 889.00

FLOW LENGTH(FEET) = 210.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 45.0 INCH PIPE IS 36.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 21.62

ESTIMATED PIPE DIAMETER(INCH) = 45.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 208.04

PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 17.29

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2448.00 = 6375.00 FEET.

FLOW PROCESS FROM NODE 2448.00 TO NODE 2448.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 2447.00 TO NODE 2446.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 67.65

UPSTREAM ELEVATION(FEET) = 912.00

DOWNSTREAM ELEVATION(FEET) = 911.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.888


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    100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.500
    SUBAREA RUNOFF(CFS) =          0.38
    TOTAL AREA(ACRES) =          0.09    TOTAL RUNOFF(CFS) =          0.38

*****
    FLOW PROCESS FROM NODE    2446.00 TO NODE    2445.00 IS CODE = 51
-----
    >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
    >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
    ELEVATION DATA: UPSTREAM(FEET) = 911.00 DOWNSTREAM(FEET) = 900.00
    CHANNEL LENGTH THRU SUBAREA(FEET) = 620.00 CHANNEL SLOPE = 0.0177
    CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
    MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
    100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.781
    *USER SPECIFIED(SUBAREA):
    USER-SPECIFIED RUNOFF COEFFICIENT = .5700
    S.C.S. CURVE NUMBER (AMC II) = 0
    TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.40
    TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.02
    AVERAGE FLOW DEPTH(FEET) = 0.39 TRAVEL TIME(MIN.) = 3.42
    Tc(MIN.) = 10.31
    SUBAREA AREA(ACRES) = 2.40 SUBAREA RUNOFF(CFS) = 7.91
    AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
    TOTAL AREA(ACRES) = 2.5 PEAK FLOW RATE(CFS) = 8.21

    END OF SUBAREA CHANNEL FLOW HYDRAULICS:
    DEPTH(FEET) = 0.55 FLOW VELOCITY(FEET/SEC.) = 3.67
    LONGEST FLOWPATH FROM NODE 2447.00 TO NODE 2445.00 = 687.65 FEET.

*****
    FLOW PROCESS FROM NODE    2445.00 TO NODE    2445.00 IS CODE = 1
-----
    >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
    TOTAL NUMBER OF STREAMS = 2
    CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
    TIME OF CONCENTRATION(MIN.) = 10.31
    RAINFALL INTENSITY(INCH/HR) = 5.78
    TOTAL STREAM AREA(ACRES) = 2.49
    PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.21

*****
    FLOW PROCESS FROM NODE    2444.00 TO NODE    2443.00 IS CODE = 21
-----
    >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
    *USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.33
UPSTREAM ELEVATION(FEET) = 912.00
DOWNSTREAM ELEVATION(FEET) = 910.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.505
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.782
SUBAREA RUNOFF(CFS) = 0.27
TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.27

FLOW PROCESS FROM NODE 2443.00 TO NODE 2445.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 910.00 DOWNSTREAM ELEVATION(FEET) = 900.00
STREET LENGTH(FEET) = 700.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.91
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 8.17
AVERAGE FLOW VELOCITY(FT/SEC.) = 2.43
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.70
STREET FLOW TRAVEL TIME(MIN.) = 4.81 Tc(MIN.) = 11.31
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.446

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.04 SUBAREA RUNOFF(CFS) = 3.23
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 3.41

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.59
FLOW VELOCITY(FT/SEC.) = 2.75 DEPTH*VELOCITY(FT*FT/SEC.) = 0.93

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LONGEST FLOWPATH FROM NODE 2444.00 TO NODE 2445.00 = 783.33 FEET.

FLOW PROCESS FROM NODE 2445.00 TO NODE 2445.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 11.31

RAINFALL INTENSITY(INCH/HR) = 5.45

TOTAL STREAM AREA(ACRES) = 1.10

PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.41

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.21	10.31	5.781	2.49
2	3.41	11.31	5.446	1.10

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.32	10.31	5.781
2	11.14	11.31	5.446

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.32 Tc(MIN.) = 10.31

TOTAL AREA(ACRES) = 3.6

LONGEST FLOWPATH FROM NODE 2444.00 TO NODE 2445.00 = 783.33 FEET.

FLOW PROCESS FROM NODE 2445.00 TO NODE 2448.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(Feet) = 894.00 DOWNSTREAM(Feet) = 889.00

FLOW LENGTH(Feet) = 75.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.4 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 14.09

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.32

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PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 10.40
LONGEST FLOWPATH FROM NODE 2444.00 TO NODE 2448.00 = 858.33 FEET.

FLOW PROCESS FROM NODE 2448.00 TO NODE 2448.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.32	10.40	5.749	3.59

LONGEST FLOWPATH FROM NODE 2444.00 TO NODE 2448.00 = 858.33 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	208.04	17.29	4.142	118.25

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2448.00 = 6375.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	136.45	10.40	5.749
2	216.19	17.29	4.142

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 216.19 Tc(MIN.) = 17.29
TOTAL AREA(ACRES) = 121.8

FLOW PROCESS FROM NODE 2448.00 TO NODE 2448.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 2448.00 TO NODE 2442.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 889.00 DOWNSTREAM(FEET) = 888.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 51.0 INCH PIPE IS 39.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.18
ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1

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PIPE-FLOW(CFS) = 216.19
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 17.34
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2442.00 = 6425.00 FEET.

FLOW PROCESS FROM NODE 2442.00 TO NODE 2442.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 17.34
RAINFALL INTENSITY(INCH/HR) = 4.13
TOTAL STREAM AREA(ACRES) = 121.84
PEAK FLOW RATE(CFS) AT CONFLUENCE = 216.19

FLOW PROCESS FROM NODE 2441.00 TO NODE 2440.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 908.00
DOWNSTREAM ELEVATION(FEET) = 905.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914
SUBAREA RUNOFF(CFS) = 0.50
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 2440.00 TO NODE 2439.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 905.00 DOWNSTREAM(FEET) = 895.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 315.00 CHANNEL SLOPE = 0.0317
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.882
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.59

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TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.42
 AVERAGE FLOW DEPTH(FEET) = 0.29 TRAVEL TIME(MIN.) = 1.53
 Tc(MIN.) = 7.87
 SUBAREA AREA(ACRES) = 1.57 SUBAREA RUNOFF(CFS) = 6.16
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 TOTAL AREA(ACRES) = 1.7 PEAK FLOW RATE(CFS) = 6.59

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.41 FLOW VELOCITY(FEET/SEC.) = 4.15
 LONGEST FLOWPATH FROM NODE 2441.00 TO NODE 2439.00 = 410.00 FEET.

FLOW PROCESS FROM NODE 2439.00 TO NODE 2442.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 889.00 DOWNSTREAM(FEET) = 888.00
 FLOW LENGTH(FEET) = 120.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.61
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.59
 PIPE TRAVEL TIME(MIN.) = 0.36 Tc(MIN.) = 8.23
 LONGEST FLOWPATH FROM NODE 2441.00 TO NODE 2442.00 = 530.00 FEET.

FLOW PROCESS FROM NODE 2442.00 TO NODE 2442.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.23
 RAINFALL INTENSITY(INCH/HR) = 6.69
 TOTAL STREAM AREA(ACRES) = 1.68
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.59

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	216.19	17.34	4.135	121.84
2	6.59	8.23	6.688	1.68

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

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** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	109.18	8.23	6.688
2	220.27	17.34	4.135

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 220.27 Tc(MIN.) = 17.34
TOTAL AREA(ACRES) = 123.5
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2442.00 = 6425.00 FEET.

FLOW PROCESS FROM NODE 2442.00 TO NODE 2438.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 888.00 DOWNSTREAM(FEET) = 887.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 51.0 INCH PIPE IS 40.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 18.20

ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 220.27

PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 17.39

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2438.00 = 6475.00 FEET.

FLOW PROCESS FROM NODE 2438.00 TO NODE 2438.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 17.39

RAINFALL INTENSITY(INCH/HR) = 4.13

TOTAL STREAM AREA(ACRES) = 123.52

PEAK FLOW RATE(CFS) AT CONFLUENCE = 220.27

FLOW PROCESS FROM NODE 2437.00 TO NODE 2436.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 897.00

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DOWNSTREAM ELEVATION(FEET) =    895.00
ELEVATION DIFFERENCE(FEET) =     2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.287
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.955
SUBAREA RUNOFF(CFS) =         0.59
TOTAL AREA(ACRES) =         0.13   TOTAL RUNOFF(CFS) =         0.59

*****
FLOW PROCESS FROM NODE    2436.00 TO NODE    2435.00 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #   1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) =  895.00  DOWNSTREAM ELEVATION(FEET) =  894.00
STREET LENGTH(FEET) =   300.00   CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =  18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =   2
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =         2.01
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =   0.30
  HALFSTREET FLOOD WIDTH(FEET) =   8.51
  AVERAGE FLOW VELOCITY(FT/SEC.) =   1.19
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   0.35
STREET FLOW TRAVEL TIME(MIN.) =   4.18   Tc(MIN.) =   10.47
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =   5.724
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) =   0
AREA-AVERAGE RUNOFF COEFFICIENT =   0.570
SUBAREA AREA(ACRES) =   0.86   SUBAREA RUNOFF(CFS) =   2.81
TOTAL AREA(ACRES) =   1.0   PEAK FLOW RATE(CFS) =   3.23

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34   HALFSTREET FLOOD WIDTH(FEET) = 10.47
FLOW VELOCITY(FT/SEC.) = 1.33   DEPTH*VELOCITY(FT*FT/SEC.) = 0.45
LONGEST FLOWPATH FROM NODE    2437.00 TO NODE    2435.00 =   380.00 FEET.

*****
FLOW PROCESS FROM NODE    2435.00 TO NODE    2438.00 IS CODE =   31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 888.00 DOWNSTREAM(FEET) = 887.00
FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.86
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.23
PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 10.85
LONGEST FLOWPATH FROM NODE 2437.00 TO NODE 2438.00 = 490.00 FEET.

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FLOW PROCESS FROM NODE 2438.00 TO NODE 2438.00 IS CODE = 1

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```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.85
RAINFALL INTENSITY(INCH/HR) = 5.60
TOTAL STREAM AREA(ACRES) = 0.99
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.23

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	220.27	17.39	4.128	123.52
2	3.23	10.85	5.595	0.99

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	165.73	10.85	5.595
2	222.65	17.39	4.128

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 222.65 Tc(MIN.) = 17.39
TOTAL AREA(ACRES) = 124.5
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2438.00 = 6475.00 FEET.

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FLOW PROCESS FROM NODE 2438.00 TO NODE 2434.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 889.00 DOWNSTREAM(FEET) = 887.00
FLOW LENGTH(FEET) = 355.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 66.0 INCH PIPE IS 50.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.43
ESTIMATED PIPE DIAMETER(INCH) = 66.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 222.65
PIPE TRAVEL TIME(MIN.) = 0.52 Tc(MIN.) = 17.90
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2434.00 = 6830.00 FEET.

FLOW PROCESS FROM NODE 2434.00 TO NODE 2434.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 17.90
RAINFALL INTENSITY(INCH/HR) = 4.05
TOTAL STREAM AREA(ACRES) = 124.51
PEAK FLOW RATE(CFS) AT CONFLUENCE = 222.65

FLOW PROCESS FROM NODE 2433.00 TO NODE 2432.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 903.00
DOWNSTREAM ELEVATION(FEET) = 899.00
ELEVATION DIFFERENCE(FEET) = 4.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.759
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.419
SUBAREA RUNOFF(CFS) = 0.72
TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.72

FLOW PROCESS FROM NODE 2432.00 TO NODE 2431.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

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```
=====
ELEVATION DATA: UPSTREAM(FEET) = 899.00 DOWNSTREAM(FEET) = 896.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 510.00 CHANNEL SLOPE = 0.0059
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.072
```

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.89
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.24
AVERAGE FLOW DEPTH(FEET) = 0.62 TRAVEL TIME(MIN.) = 3.80
Tc(MIN.) = 9.56
SUBAREA AREA(ACRES) = 2.93 SUBAREA RUNOFF(CFS) = 10.14
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
TOTAL AREA(ACRES) = 3.1 PEAK FLOW RATE(CFS) = 10.66
```

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

```
DEPTH(FEET) = 0.85 FLOW VELOCITY(FEET/SEC.) = 2.67
LONGEST FLOWPATH FROM NODE 2433.00 TO NODE 2431.00 = 605.00 FEET.
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FLOW PROCESS FROM NODE 2431.00 TO NODE 2434.00 IS CODE = 31
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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

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=====
ELEVATION DATA: UPSTREAM(FEET) = 890.00 DOWNSTREAM(FEET) = 889.00
FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.87
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.66
PIPE TRAVEL TIME(MIN.) = 0.14 Tc(MIN.) = 9.69
LONGEST FLOWPATH FROM NODE 2433.00 TO NODE 2434.00 = 670.00 FEET.
```

```
FLOW PROCESS FROM NODE 2434.00 TO NODE 2434.00 IS CODE = 1
```

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.69
RAINFALL INTENSITY(INCH/HR) = 6.02
TOTAL STREAM AREA(ACRES) = 3.08
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.66
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	222.65	17.90	4.051	124.51
2	10.66	9.69	6.016	3.08

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	160.56	9.69	6.016
2	229.83	17.90	4.051

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 229.83 Tc(MIN.) = 17.90

TOTAL AREA(ACRES) = 127.6

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2434.00 = 6830.00 FEET.

FLOW PROCESS FROM NODE 2434.00 TO NODE 2430.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 889.00 DOWNSTREAM(FEET) = 888.00

FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 51.0 INCH PIPE IS 40.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 19.17

ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 229.83

PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 17.94

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2430.00 = 6875.00 FEET.

FLOW PROCESS FROM NODE 2430.00 TO NODE 2430.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 17.94

RAINFALL INTENSITY(INCH/HR) = 4.04

TOTAL STREAM AREA(ACRES) = 127.59

PEAK FLOW RATE(CFS) AT CONFLUENCE = 229.83

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FLOW PROCESS FROM NODE 2429.00 TO NODE 2428.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1290.00

DOWNSTREAM ELEVATION(FEET) = 1235.00

ELEVATION DIFFERENCE(FEET) = 55.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 0.53

TOTAL AREA(ACRES) = 0.29 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2428.00 TO NODE 2427.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1235.00 DOWNSTREAM(FEET) = 910.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 710.00 CHANNEL SLOPE = 0.4577

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.875

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2600

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 21.55

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 15.15

AVERAGE FLOW DEPTH(FEET) = 0.38 TRAVEL TIME(MIN.) = 0.78

T_c(MIN.) = 7.88

SUBAREA AREA(ACRES) = 23.50 SUBAREA RUNOFF(CFS) = 42.01

AREA-AVERAGE RUNOFF COEFFICIENT = 0.260

TOTAL AREA(ACRES) = 23.8 PEAK FLOW RATE(CFS) = 42.50

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.55 FLOW VELOCITY(FEET/SEC.) = 18.67

LONGEST FLOWPATH FROM NODE 2429.00 TO NODE 2427.00 = 810.00 FEET.

FLOW PROCESS FROM NODE 2427.00 TO NODE 2430.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

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>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 904.00 DOWNSTREAM(FEET) = 888.00
FLOW LENGTH(FEET) = 395.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 15.67
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.50
PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 8.30
LONGEST FLOWPATH FROM NODE 2429.00 TO NODE 2430.00 = 1205.00 FEET.
```

FLOW PROCESS FROM NODE 2430.00 TO NODE 2430.00 IS CODE = 1

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.30
RAINFALL INTENSITY(INCH/HR) = 6.65
TOTAL STREAM AREA(ACRES) = 23.79
PEAK FLOW RATE(CFS) AT CONFLUENCE = 42.50
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	229.83	17.94	4.045	127.59
2	42.50	8.30	6.648	23.79

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	182.33	8.30	6.648
2	255.68	17.94	4.045

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 255.68 Tc(MIN.) = 17.94
TOTAL AREA(ACRES) = 151.4
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2430.00 = 6875.00 FEET.
```

FLOW PROCESS FROM NODE 2430.00 TO NODE 2391.00 IS CODE = 31

```
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
```

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>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 888.00 DOWNSTREAM(FEET) = 877.00
FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 51.0 INCH PIPE IS 40.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.33
ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 255.68
PIPE TRAVEL TIME(MIN.) = 0.31 Tc(MIN.) = 18.25
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2391.00 = 7275.00 FEET.
```

```
FLOW PROCESS FROM NODE 2391.00 TO NODE 2391.00 IS CODE = 10
-----
```

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

```
FLOW PROCESS FROM NODE 2417.00 TO NODE 2416.00 IS CODE = 21
-----
```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 906.00
DOWNSTREAM ELEVATION(FEET) = 905.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.663
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.663
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.26
```

```
FLOW PROCESS FROM NODE 2416.00 TO NODE 2415.00 IS CODE = 62
-----
```

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 905.00 DOWNSTREAM ELEVATION(FEET) = 895.00
STREET LENGTH(FEET) = 325.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

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SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.83
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.26
 HALFSTREET FLOOD WIDTH(FEET) = 6.85
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.26
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86
 STREET FLOW TRAVEL TIME(MIN.) = 1.66 Tc(MIN.) = 8.32
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.639
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 1.88 SUBAREA RUNOFF(CFS) = 7.11
 TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 7.34

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.24
 FLOW VELOCITY(FEET/SEC.) = 3.78 DEPTH*VELOCITY(FT*FT/SEC.) = 1.18
 LONGEST FLOWPATH FROM NODE 2417.00 TO NODE 2415.00 = 390.00 FEET.

 FLOW PROCESS FROM NODE 2415.00 TO NODE 2414.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	889.00	DOWNSTREAM(FEET) =	888.00
FLOW LENGTH(FEET) =	160.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	18.0 INCH PIPE IS	13.8 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	5.07		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	7.34		
PIPE TRAVEL TIME(MIN.) =	0.53	Tc(MIN.) =	8.85
LONGEST FLOWPATH FROM NODE	2417.00 TO NODE	2414.00 =	550.00 FEET.

 FLOW PROCESS FROM NODE 2414.00 TO NODE 2414.00 IS CODE = 10

 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

 FLOW PROCESS FROM NODE 2400.00 TO NODE 2399.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
 =====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1000.00

DOWNSTREAM ELEVATION(FEET) = 987.00

ELEVATION DIFFERENCE(FEET) = 13.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.755

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 1.23

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 1.23

FLOW PROCESS FROM NODE 2399.00 TO NODE 2398.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<
 =====

UPSTREAM ELEVATION(FEET) = 987.00 DOWNSTREAM ELEVATION(FEET) = 940.00

STREET LENGTH(FEET) = 445.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.02

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.23

HALFSTREET FLOOD WIDTH(FEET) = 4.99

AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.48

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.24

STREET FLOW TRAVEL TIME(MIN.) = 1.35 T_c(MIN.) = 3.11

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900

S.C.S. CURVE NUMBER (AMC II) = 0

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AREA-AVERAGE RUNOFF COEFFICIENT = 0.890
SUBAREA AREA(ACRES) = 0.68 SUBAREA RUNOFF(CFS) = 5.58
TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 6.81

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 6.71
FLOW VELOCITY(FEET/SEC.) = 5.99 DEPTH*VELOCITY(FT*FT/SEC.) = 1.56
LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2398.00 = 545.00 FEET.

FLOW PROCESS FROM NODE 2398.00 TO NODE 2397.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 934.00 DOWNSTREAM(FEET) = 908.00
FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.19
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.81
PIPE TRAVEL TIME(MIN.) = 0.55 Tc(MIN.) = 3.65
LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2397.00 = 945.00 FEET.

FLOW PROCESS FROM NODE 2397.00 TO NODE 2397.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 3.65
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.83
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.81

FLOW PROCESS FROM NODE 2396.00 TO NODE 2395.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 940.00
DOWNSTREAM ELEVATION(FEET) = 930.00

```

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ELEVATION DIFFERENCE(FEET) =    10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    4.428
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) =        0.95
TOTAL AREA(ACRES) =        0.18    TOTAL RUNOFF(CFS) =        0.95

*****
FLOW PROCESS FROM NODE    2395.00 TO NODE    2397.00 IS CODE =    62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #    1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) =    930.00    DOWNSTREAM ELEVATION(FEET) =    916.00
STREET LENGTH(FEET) =    285.00    CURB HEIGHT(INCHES) =    6.0
STREET HALFWIDTH(FEET) =    18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =    8.00
INSIDE STREET CROSSFALL(DECIMAL) =    0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =    0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =    2
STREET PARKWAY CROSSFALL(DECIMAL) =    0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =    0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =    0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =        1.95
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) =    0.20
HALFSTREET FLOOD WIDTH(FEET) =    3.92
AVERAGE FLOW VELOCITY(FEET/SEC.) =    3.59
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.73
STREET FLOW TRAVEL TIME(MIN.) =    1.32    Tc(MIN.) =    5.75
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    8.425
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT =    .5700
S.C.S. CURVE NUMBER (AMC II) =    0
AREA-AVERAGE RUNOFF COEFFICIENT =    0.570
SUBAREA AREA(ACRES) =    0.42    SUBAREA RUNOFF(CFS) =    2.02
TOTAL AREA(ACRES) =    0.6    PEAK FLOW RATE(CFS) =    2.88

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) =    0.23    HALFSTREET FLOOD WIDTH(FEET) =    5.12
FLOW VELOCITY(FEET/SEC.) =    3.79    DEPTH*VELOCITY(FT*FT/SEC.) =    0.87
LONGEST FLOWPATH FROM NODE    2396.00 TO NODE    2397.00 =    385.00 FEET.

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FLOW PROCESS FROM NODE 2397.00 TO NODE 2397.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.75
RAINFALL INTENSITY(INCH/HR) = 8.42
TOTAL STREAM AREA(ACRES) = 0.60
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.88

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.81	3.65	9.222	0.83
2	2.88	5.75	8.425	0.60

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.64	3.65	9.222
2	9.10	5.75	8.425

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.10 Tc(MIN.) = 5.75
TOTAL AREA(ACRES) = 1.4
LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2397.00 = 945.00 FEET.

FLOW PROCESS FROM NODE 2397.00 TO NODE 2394.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 910.00 DOWNSTREAM(FEET) = 894.00
FLOW LENGTH(FEET) = 455.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.51
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 9.10
PIPE TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 6.47
LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2394.00 = 1400.00 FEET.

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FLOW PROCESS FROM NODE 2394.00 TO NODE 2394.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	6.47
RAINFALL INTENSITY(INCH/HR) =	7.81
TOTAL STREAM AREA(ACRES) =	1.43
PEAK FLOW RATE(CFS) AT CONFLUENCE =	9.10

FLOW PROCESS FROM NODE 2393.00 TO NODE 2392.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.5700
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	97.50
UPSTREAM ELEVATION(FEET) =	916.00
DOWNSTREAM ELEVATION(FEET) =	912.00
ELEVATION DIFFERENCE(FEET) =	4.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	5.885
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	8.302
SUBAREA RUNOFF(CFS) =	0.90
TOTAL AREA(ACRES) =	0.19
TOTAL RUNOFF(CFS) =	0.90

FLOW PROCESS FROM NODE 2392.00 TO NODE 2394.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	912.00	DOWNSTREAM ELEVATION(FEET) =	900.00
STREET LENGTH(FEET) =	365.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =	0.0200

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.00
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.22
HALFSTREET FLOOD WIDTH(FEET) = 4.65
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.98
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.65
STREET FLOW TRAVEL TIME(MIN.) = 2.04 Tc(MIN.) = 7.93
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.851
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 0.56 SUBAREA RUNOFF(CFS) = 2.19
TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 2.93

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.24 HALFSTREET FLOOD WIDTH(FEET) = 5.85
FLOW VELOCITY(FEET/SEC.) = 3.18 DEPTH*VELOCITY(FT*FT/SEC.) = 0.77
LONGEST FLOWPATH FROM NODE 2393.00 TO NODE 2394.00 = 462.50 FEET.

FLOW PROCESS FROM NODE 2394.00 TO NODE 2394.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.93
RAINFALL INTENSITY(INCH/HR) = 6.85
TOTAL STREAM AREA(ACRES) = 0.75
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.93

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.10	6.47	7.806	1.43
2	2.93	7.93	6.851	0.75

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.50	6.47	7.806
2	10.92	7.93	6.851

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.50 Tc(MIN.) = 6.47

TOTAL AREA(ACRES) = 2.2

LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2394.00 = 1400.00 FEET.

FLOW PROCESS FROM NODE 2394.00 TO NODE 2414.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 894.00 DOWNSTREAM(FEET) = 888.00

FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 13.36

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.50

PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 6.60

LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2414.00 = 1505.00 FEET.

FLOW PROCESS FROM NODE 2414.00 TO NODE 2414.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.50	6.60	7.706	2.18

LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2414.00 = 1505.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.34	8.85	6.381	1.94

LONGEST FLOWPATH FROM NODE 2417.00 TO NODE 2414.00 = 550.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.98	6.60	7.706
2	16.86	8.85	6.381

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.98 Tc(MIN.) = 6.60

TOTAL AREA(ACRES) = 4.1

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FLOW PROCESS FROM NODE 2414.00 TO NODE 2414.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

FLOW PROCESS FROM NODE 2414.00 TO NODE 2391.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 894.00 DOWNSTREAM(FEET) = 883.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 320.00 CHANNEL SLOPE = 0.0344
CHANNEL FLOW THRU SUBAREA(CFS) = 16.98
FLOW VELOCITY(FEET/SEC) = 5.32 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.00 Tc(MIN.) = 7.61
LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2391.00 = 1825.00 FEET.

FLOW PROCESS FROM NODE 2391.00 TO NODE 2391.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.98	7.61	7.035	4.12

LONGEST FLOWPATH FROM NODE 2400.00 TO NODE 2391.00 = 1825.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	255.68	18.25	4.000	151.38

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2391.00 = 7275.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	123.53	7.61	7.035
2	265.34	18.25	4.000

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 265.34 Tc(MIN.) = 18.25
TOTAL AREA(ACRES) = 155.5

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```
*****
FLOW PROCESS FROM NODE    2391.00 TO NODE    2391.00 IS CODE =  12
-----
>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE    2391.00 TO NODE    2418.00 IS CODE =  31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =   877.00  DOWNSTREAM(FEET) =   869.00
FLOW LENGTH(FEET) =   267.00  MANNING'S N =   0.013
DEPTH OF FLOW IN  51.0 INCH PIPE IS  40.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =   22.25
ESTIMATED PIPE DIAMETER(INCH) =   51.00  NUMBER OF PIPES =    1
PIPE-FLOW(CFS) =       265.34
PIPE TRAVEL TIME(MIN.) =    0.20  Tc(MIN.) =   18.45
LONGEST FLOWPATH FROM NODE    2599.00 TO NODE    2418.00 =   7542.00 FEET.

*****
FLOW PROCESS FROM NODE    2418.00 TO NODE    2418.00 IS CODE =  10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE    2425.00 TO NODE    2424.00 IS CODE =  21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =  100.00
UPSTREAM ELEVATION(FEET) =   1198.00
DOWNSTREAM ELEVATION(FEET) =   1135.00
ELEVATION DIFFERENCE(FEET) =    63.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.353
SUBAREA RUNOFF(CFS) =         0.96
TOTAL AREA(ACRES) =         0.52  TOTAL RUNOFF(CFS) =         0.96

*****
FLOW PROCESS FROM NODE    2424.00 TO NODE    2423.00 IS CODE =  51
-----
```

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>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1135.00 DOWNSTREAM(FEET) = 926.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 715.00 CHANNEL SLOPE = 0.2923
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.550

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.10

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.54

AVERAGE FLOW DEPTH(FEET) = 0.21 TRAVEL TIME(MIN.) = 1.40

Tc(MIN.) = 8.50

SUBAREA AREA(ACRES) = 6.25 SUBAREA RUNOFF(CFS) = 10.23

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 6.8 PEAK FLOW RATE(CFS) = 11.09

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.29 FLOW VELOCITY(FEET/SEC.) = 10.48

LONGEST FLOWPATH FROM NODE 2425.00 TO NODE 2423.00 = 815.00 FEET.

FLOW PROCESS FROM NODE 2423.00 TO NODE 2422.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 920.00 DOWNSTREAM(FEET) = 891.00

FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 26.52

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.09

PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 8.54

LONGEST FLOWPATH FROM NODE 2425.00 TO NODE 2422.50 = 890.00 FEET.

FLOW PROCESS FROM NODE 2422.50 TO NODE 2422.50 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 8.54

RAINFALL INTENSITY(INCH/HR) = 6.53

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TOTAL STREAM AREA(ACRES) =      6.77
PEAK FLOW RATE(CFS) AT CONFLUENCE =      11.09

*****
FLOW PROCESS FROM NODE    2422.70 TO NODE    2422.60 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =    80.00
UPSTREAM ELEVATION(FEET) =    914.00
DOWNSTREAM ELEVATION(FEET) =    912.00
ELEVATION DIFFERENCE(FEET) =      2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =   10.083
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  5.866
SUBAREA RUNOFF(CFS) =      0.16
TOTAL AREA(ACRES) =      0.11  TOTAL RUNOFF(CFS) =      0.16

*****
FLOW PROCESS FROM NODE    2422.60 TO NODE    2422.50 IS CODE =   51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =    912.00  DOWNSTREAM(FEET) =    897.00
CHANNEL LENGTH THRU SUBAREA(FEET) =   550.00  CHANNEL SLOPE =   0.0273
CHANNEL BASE(FEET) =    3.00  "Z" FACTOR =   2.000
MANNING'S FACTOR = 0.030  MAXIMUM DEPTH(FEET) =   10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =   4.433
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) =    0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.51
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =   1.67
AVERAGE FLOW DEPTH(FEET) =   0.10  TRAVEL TIME(MIN.) =   5.48
Tc(MIN.) =   15.57
SUBAREA AREA(ACRES) =      0.53  SUBAREA RUNOFF(CFS) =      0.70
AREA-AVERAGE RUNOFF COEFFICIENT =   0.291
TOTAL AREA(ACRES) =      0.6  PEAK FLOW RATE(CFS) =      0.83

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =   0.13  FLOW VELOCITY(FEET/SEC.) =   2.00
LONGEST FLOWPATH FROM NODE    2422.70 TO NODE    2422.50 =   630.00 FEET.

*****
FLOW PROCESS FROM NODE    2422.50 TO NODE    2422.50 IS CODE =    1

```

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 15.57
 RAINFALL INTENSITY(INCH/HR) = 4.43
 TOTAL STREAM AREA(ACRES) = 0.64
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.83

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.09	8.54	6.527	6.77
2	0.83	15.57	4.433	0.64

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	11.54	8.54	6.527
2	8.36	15.57	4.433

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.54 T_c(MIN.) = 8.54
 TOTAL AREA(ACRES) = 7.4
 LONGEST FLOWPATH FROM NODE 2425.00 TO NODE 2422.50 = 890.00 FEET.

FLOW PROCESS FROM NODE 2422.50 TO NODE 2422.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 891.00 DOWNSTREAM(FEET) = 881.00
 FLOW LENGTH(FEET) = 350.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 10.27
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 11.54
 PIPE TRAVEL TIME(MIN.) = 0.57 T_c(MIN.) = 9.11
 LONGEST FLOWPATH FROM NODE 2425.00 TO NODE 2422.00 = 1240.00 FEET.

FLOW PROCESS FROM NODE 2422.00 TO NODE 2422.00 IS CODE = 10

 >>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
 =====

FLOW PROCESS FROM NODE 2421.00 TO NODE 2420.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1185.00

DOWNSTREAM ELEVATION(FEET) = 1143.00

ELEVATION DIFFERENCE(FEET) = 42.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353

SUBAREA RUNOFF(CFS) = 1.03

TOTAL AREA(ACRES) = 0.56 TOTAL RUNOFF(CFS) = 1.03

FLOW PROCESS FROM NODE 2420.00 TO NODE 2419.00 IS CODE = 51

 >>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1143.00 DOWNSTREAM(FEET) = 918.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 765.00 CHANNEL SLOPE = 0.2941

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.428

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.63

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 7.74

AVERAGE FLOW DEPTH(FEET) = 0.18 TRAVEL TIME(MIN.) = 1.65

Tc(MIN.) = 8.75

SUBAREA AREA(ACRES) = 4.46 SUBAREA RUNOFF(CFS) = 7.17

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 5.0 PEAK FLOW RATE(CFS) = 8.07

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.25 FLOW VELOCITY(FEET/SEC.) = 9.35

LONGEST FLOWPATH FROM NODE 2421.00 TO NODE 2419.00 = 865.00 FEET.

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FLOW PROCESS FROM NODE 2419.00 TO NODE 2422.20 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 912.00 DOWNSTREAM(FEET) = 885.00
 FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 23.08
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.07
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 8.81
 LONGEST FLOWPATH FROM NODE 2421.00 TO NODE 2422.20 = 945.00 FEET.

FLOW PROCESS FROM NODE 2422.20 TO NODE 2422.20 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.81
 RAINFALL INTENSITY(INCH/HR) = 6.40
 TOTAL STREAM AREA(ACRES) = 5.02
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.07

FLOW PROCESS FROM NODE 2422.60 TO NODE 2422.40 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 897.00
 DOWNSTREAM ELEVATION(FEET) = 895.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 9.490
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.100
 SUBAREA RUNOFF(CFS) = 0.26
 TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2422.40 TO NODE 2422.20 IS CODE = 51

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>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 895.00 DOWNSTREAM(FEET) = 891.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 145.00 CHANNEL SLOPE = 0.0276
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.567

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.51

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 1.67

AVERAGE FLOW DEPTH(FEET) = 0.10 TRAVEL TIME(MIN.) = 1.44

Tc(MIN.) = 10.93

SUBAREA AREA(ACRES) = 0.31 SUBAREA RUNOFF(CFS) = 0.52

AREA-AVERAGE RUNOFF COEFFICIENT = 0.300

TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 0.75

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.12 FLOW VELOCITY(FEET/SEC.) = 1.95

LONGEST FLOWPATH FROM NODE 2422.60 TO NODE 2422.20 = 225.00 FEET.

FLOW PROCESS FROM NODE 2422.20 TO NODE 2422.20 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 10.93

RAINFALL INTENSITY(INCH/HR) = 5.57

TOTAL STREAM AREA(ACRES) = 0.45

PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.75

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.07	8.81	6.400	5.02
2	0.75	10.93	5.567	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)

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1	8.67	8.81	6.400
2	7.77	10.93	5.567

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.67 Tc(MIN.) = 8.81

TOTAL AREA(ACRES) = 5.5

LONGEST FLOWPATH FROM NODE 2421.00 TO NODE 2422.20 = 945.00 FEET.

FLOW PROCESS FROM NODE 2422.20 TO NODE 2422.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 885.00 DOWNSTREAM(FEET) = 881.00

FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 6.35

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 8.67

PIPE TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 9.86

LONGEST FLOWPATH FROM NODE 2421.00 TO NODE 2422.00 = 1345.00 FEET.

FLOW PROCESS FROM NODE 2422.00 TO NODE 2422.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.67	9.86	5.952	5.47

LONGEST FLOWPATH FROM NODE 2421.00 TO NODE 2422.00 = 1345.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.54	9.11	6.261	7.41

LONGEST FLOWPATH FROM NODE 2425.00 TO NODE 2422.00 = 1240.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.56	9.11	6.261
2	19.64	9.86	5.952

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:


```

                                P-25.TXT
PEAK FLOW RATE(CFS) =      19.64   Tc(MIN.) =      9.86
TOTAL AREA(ACRES) =      12.9

*****
FLOW PROCESS FROM NODE    2422.00 TO NODE    2422.00 IS CODE =   12
-----
>>>>>CLEAR MEMORY BANK # 2 <<<<<
=====

*****
FLOW PROCESS FROM NODE    2422.00 TO NODE    2418.00 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =   881.00  DOWNSTREAM(FEET) =   869.00
FLOW LENGTH(FEET) =   690.00  MANNING'S N =   0.013
DEPTH OF FLOW IN  21.0 INCH PIPE IS  17.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =    9.39
ESTIMATED PIPE DIAMETER(INCH) =   21.00    NUMBER OF PIPES =    1
PIPE-FLOW(CFS) =      19.64
PIPE TRAVEL TIME(MIN.) =    1.22    Tc(MIN.) =   11.08
LONGEST FLOWPATH FROM NODE    2421.00 TO NODE    2418.00 =   2035.00 FEET.

*****
FLOW PROCESS FROM NODE    2418.00 TO NODE    2418.00 IS CODE =   11
-----
>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER      (CFS)      (MIN.)  (INCH/HOUR)  (ACRE)
    1        19.64      11.08      5.519      12.88
LONGEST FLOWPATH FROM NODE    2421.00 TO NODE    2418.00 =   2035.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER      (CFS)      (MIN.)  (INCH/HOUR)  (ACRE)
    1        265.34      18.45      3.972      155.50
LONGEST FLOWPATH FROM NODE    2599.00 TO NODE    2418.00 =   7542.00 FEET.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF      Tc      INTENSITY
NUMBER      (CFS)      (MIN.)  (INCH/HOUR)
    1        178.97      11.08      5.519
    2        279.47      18.45      3.972

```

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 279.47 Tc(MIN.) = 18.45
TOTAL AREA(ACRES) = 168.4

FLOW PROCESS FROM NODE 2418.00 TO NODE 2418.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

=====

FLOW PROCESS FROM NODE 2418.00 TO NODE 2418.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

=====

FLOW PROCESS FROM NODE 2418.90 TO NODE 2418.80 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 922.00

DOWNSTREAM ELEVATION(FEET) = 920.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.999

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.423

SUBAREA RUNOFF(CFS) = 0.91

TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.91

FLOW PROCESS FROM NODE 2418.80 TO NODE 2418.20 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 920.00 DOWNSTREAM ELEVATION(FEET) = 907.00

STREET LENGTH(FEET) = 660.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

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STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.83

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(Feet) = 0.30

HALFSTREET FLOOD WIDTH(Feet) = 8.44

AVERAGE FLOW VELOCITY(Feet/Sec.) = 2.91

PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 0.86

STREET FLOW TRAVEL TIME(Min.) = 3.78 Tc(Min.) = 10.78

100 YEAR RAINFALL INTENSITY(Inch/Hour) = 5.617

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5100

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.510

SUBAREA AREA(Acres) = 2.71 SUBAREA RUNOFF(CFS) = 7.76

TOTAL AREA(Acres) = 3.0 PEAK FLOW RATE(CFS) = 8.45

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.34 HALFSTREET FLOOD WIDTH(Feet) = 10.78

FLOW VELOCITY(Feet/Sec.) = 3.30 DEPTH*VELOCITY(Feet*Feet/Sec.) = 1.13

LONGEST FLOWPATH FROM NODE 2418.90 TO NODE 2418.20 = 740.00 Feet.

FLOW PROCESS FROM NODE 2418.20 TO NODE 2418.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(Min.) = 10.78

RAINFALL INTENSITY(Inch/Hr) = 5.62

TOTAL STREAM AREA(Acres) = 2.95

PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.45

FLOW PROCESS FROM NODE 2417.84 TO NODE 2417.85 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(Feet) = 70.00

UPSTREAM ELEVATION(Feet) = 919.00

DOWNSTREAM ELEVATION(Feet) = 918.00

ELEVATION DIFFERENCE(Feet) = 1.00

```

                                P-25.TXT
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.087
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.364
SUBAREA RUNOFF(CFS) =          0.34
TOTAL AREA(ACRES) =          0.08  TOTAL RUNOFF(CFS) =          0.34

*****
FLOW PROCESS FROM NODE    2417.85 TO NODE    2418.20 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) =  918.00  DOWNSTREAM ELEVATION(FEET) =  907.00
STREET LENGTH(FEET) =  1005.00  CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =  18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =  0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =  0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =  0.0200

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =          5.89
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =  0.34
  HALFSTREET FLOOD WIDTH(FEET) =  10.47
  AVERAGE FLOW VELOCITY(FEET/SEC.) =   2.42
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   0.81
  STREET FLOW TRAVEL TIME(MIN.) =   6.91  Tc(MIN.) =  14.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  4.748
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .5700
  S.C.S. CURVE NUMBER (AMC II) =  0
  AREA-AVERAGE RUNOFF COEFFICIENT =  0.570
  SUBAREA AREA(ACRES) =   3.99  SUBAREA RUNOFF(CFS) =  10.80
  TOTAL AREA(ACRES) =   4.1  PEAK FLOW RATE(CFS) =  11.01

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.40  HALFSTREET FLOOD WIDTH(FEET) =  13.59
FLOW VELOCITY(FEET/SEC.) =  2.80  DEPTH*VELOCITY(FT*FT/SEC.) =  1.12
LONGEST FLOWPATH FROM NODE    2417.84 TO NODE    2418.20 =  1075.00 FEET.

*****
FLOW PROCESS FROM NODE    2418.20 TO NODE    2418.20 IS CODE =   1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 14.00
RAINFALL INTENSITY(INCH/HR) = 4.75
TOTAL STREAM AREA(ACRES) = 4.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.01
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.45	10.78	5.617	2.95
2	11.01	14.00	4.748	4.07

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.94	10.78	5.617
2	18.16	14.00	4.748

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 18.16 Tc(MIN.) = 14.00
TOTAL AREA(ACRES) = 7.0
LONGEST FLOWPATH FROM NODE 2417.84 TO NODE 2418.20 = 1075.00 FEET.
```

FLOW PROCESS FROM NODE 2418.20 TO NODE 2418.70 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 907.00 DOWNSTREAM(FEET) = 902.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 425.00 CHANNEL SLOPE = 0.0118
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.399
```

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 19.02
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.04
AVERAGE FLOW DEPTH(FEET) = 0.96 TRAVEL TIME(MIN.) = 1.75
Tc(MIN.) = 15.75
SUBAREA AREA(ACRES) = 0.69 SUBAREA RUNOFF(CFS) = 1.73
```

```

                                P-25.TXT
AREA-AVERAGE RUNOFF COEFFICIENT = 0.547
TOTAL AREA(ACRES) =          7.7          PEAK FLOW RATE(CFS) =          18.56

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.95    FLOW VELOCITY(FEET/SEC.) = 3.99
LONGEST FLOWPATH FROM NODE    2417.84 TO NODE    2418.70 =    1500.00 FEET.

*****
FLOW PROCESS FROM NODE    2418.70 TO NODE    2418.60 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 896.00 DOWNSTREAM(FEET) = 890.00
FLOW LENGTH(FEET) = 145.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.01
ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 18.56
PIPE TRAVEL TIME(MIN.) = 0.19    Tc(MIN.) = 15.94
LONGEST FLOWPATH FROM NODE    2417.84 TO NODE    2418.60 =    1645.00 FEET.

*****
FLOW PROCESS FROM NODE    2418.60 TO NODE    2418.60 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
=====

*****
FLOW PROCESS FROM NODE    2418.50 TO NODE    2418.40 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1105.00
DOWNSTREAM ELEVATION(FEET) = 1055.00
ELEVATION DIFFERENCE(FEET) = 50.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.46
TOTAL AREA(ACRES) = 0.25    TOTAL RUNOFF(CFS) = 0.46

*****
FLOW PROCESS FROM NODE    2418.40 TO NODE    2418.30 IS CODE = 51

```

```

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1055.00 DOWNSTREAM(FEET) = 909.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 410.00 CHANNEL SLOPE = 0.3561
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.845
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.67
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.20
AVERAGE FLOW DEPTH(FEET) = 0.17 TRAVEL TIME(MIN.) = 0.83
Tc(MIN.) = 7.94
SUBAREA AREA(ACRES) = 4.91 SUBAREA RUNOFF(CFS) = 8.40
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 5.2 PEAK FLOW RATE(CFS) = 8.83

```

```

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.24 FLOW VELOCITY(FEET/SEC.) = 10.51
LONGEST FLOWPATH FROM NODE 2418.50 TO NODE 2418.30 = 510.00 FEET.

```

```

*****

```

```

FLOW PROCESS FROM NODE 2418.30 TO NODE 2418.32 IS CODE = 31

```

```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 903.00 DOWNSTREAM(FEET) = 900.00
FLOW LENGTH(FEET) = 340.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.02
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.83
PIPE TRAVEL TIME(MIN.) = 0.94 Tc(MIN.) = 8.88
LONGEST FLOWPATH FROM NODE 2418.50 TO NODE 2418.32 = 850.00 FEET.

```

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*****

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```

FLOW PROCESS FROM NODE 2418.32 TO NODE 2418.32 IS CODE = 1

```

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.88
RAINFALL INTENSITY(INCH/HR) = 6.37

```

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TOTAL STREAM AREA(ACRES) = 5.16
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.83

FLOW PROCESS FROM NODE 2418.10 TO NODE 2417.90 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00

UPSTREAM ELEVATION(FEET) = 925.00

DOWNSTREAM ELEVATION(FEET) = 918.00

ELEVATION DIFFERENCE(FEET) = 7.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.072

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.41

TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 2417.90 TO NODE 2417.91 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 918.00 DOWNSTREAM ELEVATION(FEET) = 912.00

STREET LENGTH(FEET) = 115.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.75

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.20

HALFSTREET FLOOD WIDTH(FEET) = 3.46

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.67

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.72

STREET FLOW TRAVEL TIME(MIN.) = 0.52 Tc(MIN.) = 4.59

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

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NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.567

SUBAREA AREA(ACRES) = 0.51 SUBAREA RUNOFF(CFS) = 2.68

TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 3.09

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.23 HALFSTREET FLOOD WIDTH(FEET) = 5.25

FLOW VELOCITY(FEET/SEC.) = 3.92 DEPTH*VELOCITY(FT*FT/SEC.) = 0.91

LONGEST FLOWPATH FROM NODE 2418.10 TO NODE 2417.91 = 190.00 FEET.

FLOW PROCESS FROM NODE 2417.91 TO NODE 2417.80 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 912.00 DOWNSTREAM(FEET) = 908.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 530.00 CHANNEL SLOPE = 0.0075

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.832

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.38

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.62

AVERAGE FLOW DEPTH(FEET) = 0.65 TRAVEL TIME(MIN.) = 3.37

Tc(MIN.) = 7.96

SUBAREA AREA(ACRES) = 2.18 SUBAREA RUNOFF(CFS) = 8.49

AREA-AVERAGE RUNOFF COEFFICIENT = 0.569

TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 10.78

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.80 FLOW VELOCITY(FEET/SEC.) = 2.94

LONGEST FLOWPATH FROM NODE 2418.10 TO NODE 2417.80 = 720.00 FEET.

FLOW PROCESS FROM NODE 2417.80 TO NODE 2417.32 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 902.00 DOWNSTREAM(FEET) = 900.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

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DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.50
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.78
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 8.03
 LONGEST FLOWPATH FROM NODE 2418.10 TO NODE 2417.32 = 770.00 FEET.

FLOW PROCESS FROM NODE 2417.32 TO NODE 2417.32 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.03
 RAINFALL INTENSITY(INCH/HR) = 6.79
 TOTAL STREAM AREA(ACRES) = 2.77
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.78

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.83	8.88	6.368	5.16
2	10.78	8.03	6.792	2.77

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	18.77	8.03	6.792
2	18.93	8.88	6.368

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 18.93 Tc(MIN.) = 8.88
 TOTAL AREA(ACRES) = 7.9
 LONGEST FLOWPATH FROM NODE 2418.50 TO NODE 2417.32 = 850.00 FEET.

FLOW PROCESS FROM NODE 2418.32 TO NODE 2417.70 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 900.00 DOWNSTREAM(FEET) = 899.00
 FLOW LENGTH(FEET) = 115.00 MANNING'S N = 0.013

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DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.24
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 18.93
 PIPE TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 9.14
 LONGEST FLOWPATH FROM NODE 2418.50 TO NODE 2417.70 = 965.00 FEET.

 FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
 =====

 FLOW PROCESS FROM NODE 2417.60 TO NODE 2417.50 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1185.00
 DOWNSTREAM ELEVATION(FEET) = 1145.00
 ELEVATION DIFFERENCE(FEET) = 40.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.684
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.647
 SUBAREA RUNOFF(CFS) = 0.78
 TOTAL AREA(ACRES) = 0.34 TOTAL RUNOFF(CFS) = 0.78

 FLOW PROCESS FROM NODE 2417.50 TO NODE 2417.40 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1145.00 DOWNSTREAM(FEET) = 908.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 580.00 CHANNEL SLOPE = 0.4086
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.929
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.75
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.76
 AVERAGE FLOW DEPTH(FEET) = 0.16 TRAVEL TIME(MIN.) = 1.10

P-25.TXT

Tc(MIN.) = 7.79
 SUBAREA AREA(ACRES) = 3.81 SUBAREA RUNOFF(CFS) = 7.92
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.300
 TOTAL AREA(ACRES) = 4.2 PEAK FLOW RATE(CFS) = 8.63

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.23 FLOW VELOCITY(FEET/SEC.) = 10.75
 LONGEST FLOWPATH FROM NODE 2417.60 TO NODE 2417.40 = 680.00 FEET.

FLOW PROCESS FROM NODE 2417.40 TO NODE 2417.30 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 902.00 DOWNSTREAM(FEET) = 899.00

FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 9.42

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 8.63

PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 7.98

LONGEST FLOWPATH FROM NODE 2417.60 TO NODE 2417.30 = 790.00 FEET.

FLOW PROCESS FROM NODE 2417.30 TO NODE 2417.30 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 7.98

RAINFALL INTENSITY(INCH/HR) = 6.82

TOTAL STREAM AREA(ACRES) = 4.15

PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.63

FLOW PROCESS FROM NODE 2417.20 TO NODE 2417.10 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1190.00

DOWNSTREAM ELEVATION(FEET) = 1136.00

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                                P-25.TXT
ELEVATION DIFFERENCE(FEET) =    54.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.684
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  7.647
SUBAREA RUNOFF(CFS) =          0.48
TOTAL AREA(ACRES) =          0.21  TOTAL RUNOFF(CFS) =          0.48

*****
FLOW PROCESS FROM NODE    2417.10 TO NODE    2417.30 IS CODE =   51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =  1136.00  DOWNSTREAM(FEET) =   910.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1085.00  CHANNEL SLOPE =  0.2083
CHANNEL BASE(FEET) =   3.00  "Z" FACTOR =  2.000
MANNING'S FACTOR = 0.030  MAXIMUM DEPTH(FEET) =  10.00
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =  6.320
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) =  0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =    6.38
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) =  7.87
AVERAGE FLOW DEPTH(FEET) =  0.23  TRAVEL TIME(MIN.) =  2.30
Tc(MIN.) =  8.98
SUBAREA AREA(ACRES) =    6.18  SUBAREA RUNOFF(CFS) =  11.72
AREA-AVERAGE RUNOFF COEFFICIENT =  0.300
TOTAL AREA(ACRES) =    6.4  PEAK FLOW RATE(CFS) =  12.12

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) =  0.34  FLOW VELOCITY(FEET/SEC.) =  9.67
LONGEST FLOWPATH FROM NODE    2417.20 TO NODE    2417.30 =  1185.00 FEET.

*****
FLOW PROCESS FROM NODE    2417.30 TO NODE    2417.30 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS =  2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM  2 ARE:
TIME OF CONCENTRATION(MIN.) =  8.98
RAINFALL INTENSITY(INCH/HR) =  6.32
TOTAL STREAM AREA(ACRES) =    6.39
PEAK FLOW RATE(CFS) AT CONFLUENCE =  12.12

** CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA

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P-25.TXT				
NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	8.63	7.98	6.820	4.15
2	12.12	8.98	6.320	6.39

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.40	7.98	6.820
2	20.11	8.98	6.320

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.11 Tc(MIN.) = 8.98

TOTAL AREA(ACRES) = 10.5

LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2417.30 = 1185.00 FEET.

FLOW PROCESS FROM NODE 2417.30 TO NODE 2417.70 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 904.00 DOWNSTREAM(FEET) = 899.00

FLOW LENGTH(FEET) = 85.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 15.30

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.11

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 9.07

LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2417.70 = 1270.00 FEET.

FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.07

RAINFALL INTENSITY(INCH/HR) = 6.28

TOTAL STREAM AREA(ACRES) = 10.54

PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.11

FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 7

>>>>USER SPECIFIED HYDROLOGY INFORMATION AT NODE<<<<

=====

USER-SPECIFIED VALUES ARE AS FOLLOWS:

TC(MIN) = 17.34 RAIN INTENSITY(INCH/HOUR) = 4.13

TOTAL AREA(ACRES) = 193.00 TOTAL RUNOFF(CFS) = 310.57

FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:

TIME OF CONCENTRATION(MIN.) = 17.34

RAINFALL INTENSITY(INCH/HR) = 4.13

TOTAL STREAM AREA(ACRES) = 193.00

PEAK FLOW RATE(CFS) AT CONFLUENCE = 310.57

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.11	9.07	6.279	10.54
2	310.57	17.34	4.135	193.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	182.63	9.07	6.279
2	323.81	17.34	4.135

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 323.81 Tc(MIN.) = 17.34

TOTAL AREA(ACRES) = 203.5

LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2417.70 = 1270.00 FEET.

FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

P-25.TXT

1 323.81 17.34 4.135 203.54
 LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2417.70 = 1270.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.93	9.14	6.249	7.93

LONGEST FLOWPATH FROM NODE 2418.50 TO NODE 2417.70 = 965.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	189.65	9.14	6.249
2	336.34	17.34	4.135

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 336.34 Tc(MIN.) = 17.34
 TOTAL AREA(ACRES) = 211.5

FLOW PROCESS FROM NODE 2417.70 TO NODE 2417.70 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 2417.70 TO NODE 2418.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 899.00 DOWNSTREAM(FEET) = 891.00
 FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 63.0 INCH PIPE IS 49.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 18.45
 ESTIMATED PIPE DIAMETER(INCH) = 63.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 336.34
 PIPE TRAVEL TIME(MIN.) = 0.47 Tc(MIN.) = 17.81
 LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2418.60 = 1785.00 FEET.

FLOW PROCESS FROM NODE 2418.60 TO NODE 2418.60 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM	RUNOFF	Tc	INTENSITY	AREA

P-25.TXT

NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	336.34	17.81	4.065	211.47

LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2418.60 = 1785.00 FEET.

**** MEMORY BANK # 2 CONFLUENCE DATA ****

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.56	15.94	4.366	7.71

LONGEST FLOWPATH FROM NODE 2417.84 TO NODE 2418.60 = 1645.00 FEET.

**** PEAK FLOW RATE TABLE ****

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	319.59	15.94	4.366
2	353.62	17.81	4.065

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 353.62 Tc(MIN.) = 17.81
 TOTAL AREA(ACRES) = 219.2

 FLOW PROCESS FROM NODE 2418.60 TO NODE 2418.60 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 2418.60 TO NODE 2418.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====
 ELEVATION DATA: UPSTREAM(FEET) = 891.00 DOWNSTREAM(FEET) = 869.00
 FLOW LENGTH(FEET) = 745.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 57.0 INCH PIPE IS 44.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 23.79
 ESTIMATED PIPE DIAMETER(INCH) = 57.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 353.62
 PIPE TRAVEL TIME(MIN.) = 0.52 Tc(MIN.) = 18.33
 LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2418.00 = 2530.00 FEET.

 FLOW PROCESS FROM NODE 2418.00 TO NODE 2418.00 IS CODE = 11

 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
 =====

**** MAIN STREAM CONFLUENCE DATA ****

P-25.TXT

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	353.62	18.33	3.990	219.18

LONGEST FLOWPATH FROM NODE 2417.20 TO NODE 2418.00 = 2530.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	279.47	18.45	3.972	168.38

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2418.00 = 7542.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	631.17	18.33	3.990
2	631.52	18.45	3.972

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 631.52 Tc(MIN.) = 18.45
 TOTAL AREA(ACRES) = 387.6

 FLOW PROCESS FROM NODE 2418.00 TO NODE 2418.00 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 1 <<<<<
 =====

 FLOW PROCESS FROM NODE 2418.00 TO NODE 2380.20 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 869.00 DOWNSTREAM(FEET) = 858.00
 FLOW LENGTH(FEET) = 325.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 69.0 INCH PIPE IS 54.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 28.93
 ESTIMATED PIPE DIAMETER(INCH) = 69.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 631.52
 PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 18.64
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2380.20 = 7867.00 FEET.

 FLOW PROCESS FROM NODE 2380.20 TO NODE 2380.20 IS CODE = 10

 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
 =====

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FLOW PROCESS FROM NODE 2415.90 TO NODE 2415.80 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00

UPSTREAM ELEVATION(FEET) = 915.00

DOWNSTREAM ELEVATION(FEET) = 907.00

ELEVATION DIFFERENCE(FEET) = 8.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.166

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.53

TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2415.80 TO NODE 2415.70 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 907.00 DOWNSTREAM ELEVATION(FEET) = 902.00

STREET LENGTH(FEET) = 395.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.84

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.33

HALFSTREET FLOOD WIDTH(FEET) = 10.16

AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.54

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.84

STREET FLOW TRAVEL TIME(MIN.) = 2.59 Tc(MIN.) = 6.76

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.591

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

P-25.TXT

AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 2.43 SUBAREA RUNOFF(CFS) = 10.51
TOTAL AREA(ACRES) = 2.5 PEAK FLOW RATE(CFS) = 10.95

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.16
FLOW VELOCITY(FEET/SEC.) = 2.96 DEPTH*VELOCITY(FT*FT/SEC.) = 1.15
LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2415.70 = 480.00 FEET.

FLOW PROCESS FROM NODE 2415.70 TO NODE 2415.60 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 896.00 DOWNSTREAM(FEET) = 895.00
FLOW LENGTH(FEET) = 245.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.85
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.95
PIPE TRAVEL TIME(MIN.) = 0.84 Tc(MIN.) = 7.60
LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2415.60 = 725.00 FEET.

FLOW PROCESS FROM NODE 2415.60 TO NODE 2415.60 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 7.60
RAINFALL INTENSITY(INCH/HR) = 7.04
TOTAL STREAM AREA(ACRES) = 2.53
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.95

FLOW PROCESS FROM NODE 2415.50 TO NODE 2415.40 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 68.75
UPSTREAM ELEVATION(FEET) = 905.00
DOWNSTREAM ELEVATION(FEET) = 904.00
ELEVATION DIFFERENCE(FEET) = 1.00

P-25.TXT

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.981
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.435
SUBAREA RUNOFF(CFS) = 0.30
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.30

FLOW PROCESS FROM NODE 2415.40 TO NODE 2415.30 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 904.00 DOWNSTREAM ELEVATION(FEET) = 898.00
STREET LENGTH(FEET) = 420.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.59
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 7.97
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.38
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.68
STREET FLOW TRAVEL TIME(MIN.) = 2.94 Tc(MIN.) = 9.92
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.926
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.93 SUBAREA RUNOFF(CFS) = 6.52
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 6.76

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.53
FLOW VELOCITY(FEET/SEC.) = 2.75 DEPTH*VELOCITY(FT*FT/SEC.) = 0.93
LONGEST FLOWPATH FROM NODE 2415.50 TO NODE 2415.30 = 488.75 FEET.

FLOW PROCESS FROM NODE 2415.30 TO NODE 2415.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

P-25.TXT

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 892.00 DOWNSTREAM(FEET) = 891.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.57
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.76
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 10.00
LONGEST FLOWPATH FROM NODE 2415.50 TO NODE 2415.60 = 528.75 FEET.
```

FLOW PROCESS FROM NODE 2415.60 TO NODE 2415.60 IS CODE = 1

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.00
RAINFALL INTENSITY(INCH/HR) = 5.90
TOTAL STREAM AREA(ACRES) = 2.00
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.76
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.95	7.60	7.038	2.53
2	6.76	10.00	5.896	2.00

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.08	7.60	7.038
2	15.93	10.00	5.896

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 16.08 Tc(MIN.) = 7.60
TOTAL AREA(ACRES) = 4.5
LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2415.60 = 725.00 FEET.
```

FLOW PROCESS FROM NODE 2415.60 TO NODE 2415.20 IS CODE = 31

P-25.TXT

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 891.00 DOWNSTREAM(FEET) = 874.00
FLOW LENGTH(FEET) = 600.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.81
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 16.08
PIPE TRAVEL TIME(MIN.) = 0.93 Tc(MIN.) = 8.53
LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2415.20 = 1325.00 FEET.

FLOW PROCESS FROM NODE 2415.20 TO NODE 2415.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.53
RAINFALL INTENSITY(INCH/HR) = 6.54
TOTAL STREAM AREA(ACRES) = 4.53
PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.08

FLOW PROCESS FROM NODE 2415.10 TO NODE 2414.90 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58
UPSTREAM ELEVATION(FEET) = 902.00
DOWNSTREAM ELEVATION(FEET) = 900.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.391
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.872
SUBAREA RUNOFF(CFS) = 0.54
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.54

FLOW PROCESS FROM NODE 2414.90 TO NODE 2415.20 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 900.00 DOWNSTREAM ELEVATION(FEET) = 880.00

P-25.TXT

STREET LENGTH(FEET) = 725.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.15
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 8.77
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.46
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.05
STREET FLOW TRAVEL TIME(MIN.) = 3.49 Tc(MIN.) = 9.88
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.944
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 3.27 SUBAREA RUNOFF(CFS) = 11.08
TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 11.49

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.47
FLOW VELOCITY(FEET/SEC.) = 4.01 DEPTH*VELOCITY(FT*FT/SEC.) = 1.42
LONGEST FLOWPATH FROM NODE 2415.10 TO NODE 2415.20 = 806.58 FEET.

FLOW PROCESS FROM NODE 2415.20 TO NODE 2415.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.88
RAINFALL INTENSITY(INCH/HR) = 5.94
TOTAL STREAM AREA(ACRES) = 3.39
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.49

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

			P-25.TXT	
1	16.08	8.53	6.535	4.53
2	11.49	9.88	5.944	3.39

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.00	8.53	6.535
2	26.11	9.88	5.944

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.11 Tc(MIN.) = 9.88

TOTAL AREA(ACRES) = 7.9

LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2415.20 = 1325.00 FEET.

FLOW PROCESS FROM NODE 2415.20 TO NODE 2414.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 874.00 DOWNSTREAM(FEET) = 849.00

FLOW LENGTH(FEET) = 55.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 35.64

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 26.11

PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 9.90

LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2414.80 = 1380.00 FEET.

FLOW PROCESS FROM NODE 2414.80 TO NODE 2414.70 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 855.00 DOWNSTREAM(FEET) = 854.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 135.00 CHANNEL SLOPE = 0.0074

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.734

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 40.25

P-25.TXT

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.16
 AVERAGE FLOW DEPTH(FEET) = 1.57 TRAVEL TIME(MIN.) = 0.54
 Tc(MIN.) = 10.44
 SUBAREA AREA(ACRES) = 8.65 SUBAREA RUNOFF(CFS) = 28.27
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 TOTAL AREA(ACRES) = 16.6 PEAK FLOW RATE(CFS) = 54.16

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.82 FLOW VELOCITY(FEET/SEC.) = 4.49
 LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2414.70 = 1515.00 FEET.

FLOW PROCESS FROM NODE 2414.70 TO NODE 2380.20 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 848.00 DOWNSTREAM(FEET) = 847.00
 FLOW LENGTH(FEET) = 105.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 36.0 INCH PIPE IS 26.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.85
 ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 54.16
 PIPE TRAVEL TIME(MIN.) = 0.18 Tc(MIN.) = 10.62
 LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2380.20 = 1620.00 FEET.

FLOW PROCESS FROM NODE 2380.20 TO NODE 2380.20 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	54.16	10.62	5.672	16.57

LONGEST FLOWPATH FROM NODE 2415.90 TO NODE 2380.20 = 1620.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	631.52	18.64	3.946	387.56

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2380.20 = 7867.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	414.01	10.62	5.672

			P-25.TXT
2	669.20	18.64	3.946

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 669.20 Tc(MIN.) = 18.64
TOTAL AREA(ACRES) = 404.1

FLOW PROCESS FROM NODE 2380.20 TO NODE 2380.20 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2380.20 TO NODE 2380.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 847.00 DOWNSTREAM(FEET) = 831.00
FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 48.0 INCH PIPE IS 38.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 61.33
ESTIMATED PIPE DIAMETER(INCH) = 48.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 669.20
PIPE TRAVEL TIME(MIN.) = 0.02 Tc(MIN.) = 18.66
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2380.00 = 7932.00 FEET.

FLOW PROCESS FROM NODE 2380.00 TO NODE 2380.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2413.00 TO NODE 2412.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 891.00
DOWNSTREAM ELEVATION(FEET) = 888.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914
SUBAREA RUNOFF(CFS) = 0.45

```

                                P-25.TXT
TOTAL AREA(ACRES) =      0.10  TOTAL RUNOFF(CFS) =      0.45

*****
FLOW PROCESS FROM NODE    2412.00 TO NODE    2412.50 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #   1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) =  888.00  DOWNSTREAM ELEVATION(FEET) =  882.00
STREET LENGTH(FEET) =   358.00  CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =  18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =   1
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =   0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =       3.96
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) =   0.34
HALFSTREET FLOOD WIDTH(FEET) =   10.84
AVERAGE FLOW VELOCITY(FEET/SEC.) =   3.06
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   1.05
STREET FLOW TRAVEL TIME(MIN.) =   1.95  Tc(MIN.) =   8.29
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =   6.656
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) =   0
AREA-AVERAGE RUNOFF COEFFICIENT =   0.570
SUBAREA AREA(ACRES) =   1.84  SUBAREA RUNOFF(CFS) =   6.98
TOTAL AREA(ACRES) =   1.9  PEAK FLOW RATE(CFS) =   7.36

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) =   0.41  HALFSTREET FLOOD WIDTH(FEET) =   14.03
FLOW VELOCITY(FEET/SEC.) =   3.53  DEPTH*VELOCITY(FT*FT/SEC.) =   1.43
LONGEST FLOWPATH FROM NODE    2413.00 TO NODE    2412.50 =   453.00 FEET.

*****
FLOW PROCESS FROM NODE    2412.50 TO NODE    2411.00 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =   876.00  DOWNSTREAM(FEET) =   874.00

```

P-25.TXT

FLOW LENGTH(FEET) = 360.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.79
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.36
 PIPE TRAVEL TIME(MIN.) = 1.25 Tc(MIN.) = 9.54
 LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2411.00 = 813.00 FEET.

FLOW PROCESS FROM NODE 2411.00 TO NODE 2411.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.54
 RAINFALL INTENSITY(INCH/HR) = 6.08
 TOTAL STREAM AREA(ACRES) = 1.94
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.36

FLOW PROCESS FROM NODE 2410.00 TO NODE 2409.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 68.75
 UPSTREAM ELEVATION(FEET) = 895.00
 DOWNSTREAM ELEVATION(FEET) = 894.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.981
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.435
 SUBAREA RUNOFF(CFS) = 0.30
 TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.30

FLOW PROCESS FROM NODE 2409.00 TO NODE 2411.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 894.00 DOWNSTREAM ELEVATION(FEET) = 880.00
 STREET LENGTH(FEET) = 495.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

P-25.TXT

INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.07
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.31
HALFSTREET FLOOD WIDTH(Feet) = 9.24
AVERAGE FLOW VELOCITY(Feet/Sec.) = 3.64
PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 1.13
STREET FLOW TRAVEL TIME(Min.) = 2.27 Tc(Min.) = 9.25
100 YEAR RAINFALL INTENSITY(Inch/Hour) = 6.202
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 3.81 SUBAREA RUNOFF(CFS) = 13.47
TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 13.72

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.37 HALFSTREET FLOOD WIDTH(Feet) = 12.28
FLOW VELOCITY(Feet/Sec.) = 4.22 DEPTH*VELOCITY(Feet*Feet/Sec.) = 1.57
LONGEST FLOWPATH FROM NODE 2410.00 TO NODE 2411.00 = 563.75 FEET.

FLOW PROCESS FROM NODE 2411.00 TO NODE 2411.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(Min.) = 9.25
RAINFALL INTENSITY(Inch/Hr) = 6.20
TOTAL STREAM AREA(ACRES) = 3.88
PEAK FLOW RATE(CFS) AT CONFLUENCE = 13.72

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (Inch/Hour)	AREA (ACRE)
1	7.36	9.54	6.078	1.94
2	13.72	9.25	6.202	3.88

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.85	9.25	6.202
2	20.80	9.54	6.078

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.85 Tc(MIN.) = 9.25

TOTAL AREA(ACRES) = 5.8

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2411.00 = 813.00 FEET.

FLOW PROCESS FROM NODE 2411.00 TO NODE 2408.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 874.00 DOWNSTREAM(FEET) = 873.00

FLOW LENGTH(FEET) = 65.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 9.38

ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.85

PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 9.36

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2408.00 = 878.00 FEET.

FLOW PROCESS FROM NODE 2408.00 TO NODE 2408.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.36

RAINFALL INTENSITY(INCH/HR) = 6.15

TOTAL STREAM AREA(ACRES) = 5.82

PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.85

FLOW PROCESS FROM NODE 2407.00 TO NODE 2406.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

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                                P-25.TXT
INITIAL SUBAREA FLOW-LENGTH(FEET) =    85.00
UPSTREAM ELEVATION(FEET) =    885.00
DOWNSTREAM ELEVATION(FEET) =    883.00
ELEVATION DIFFERENCE(FEET) =      2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    6.613
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    7.700
SUBAREA RUNOFF(CFS) =      0.44
TOTAL AREA(ACRES) =      0.10    TOTAL RUNOFF(CFS) =      0.44

*****
FLOW PROCESS FROM NODE    2406.00 TO NODE    2405.00 IS CODE =    62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #    1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) =    883.00  DOWNSTREAM ELEVATION(FEET) =    880.00
STREET LENGTH(FEET) =    285.00    CURB HEIGHT(INCHES) =    6.0
STREET HALFWIDTH(FEET) =    18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =    8.00
INSIDE STREET CROSSFALL(DECIMAL) =    0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =    0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =    2
STREET PARKWAY CROSSFALL(DECIMAL) =    0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =    0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =    0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      3.38
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) =    0.29
HALFSTREET FLOOD WIDTH(FEET) =    8.31
AVERAGE FLOW VELOCITY(FEET/SEC.) =    2.09
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =    0.61
STREET FLOW TRAVEL TIME(MIN.) =    2.27    Tc(MIN.) =    8.89
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    6.364
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT =    .5700
S.C.S. CURVE NUMBER (AMC II) =    0
AREA-AVERAGE RUNOFF COEFFICIENT =    0.570
SUBAREA AREA(ACRES) =    1.61    SUBAREA RUNOFF(CFS) =    5.84
TOTAL AREA(ACRES) =    1.7    PEAK FLOW RATE(CFS) =    6.20

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) =    0.34    HALFSTREET FLOOD WIDTH(FEET) =    10.84
FLOW VELOCITY(FEET/SEC.) =    2.40    DEPTH*VELOCITY(FT*FT/SEC.) =    0.82
LONGEST FLOWPATH FROM NODE    2407.00 TO NODE    2405.00 =    370.00 FEET.

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FLOW PROCESS FROM NODE 2405.00 TO NODE 2408.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 874.00 DOWNSTREAM(FEET) = 873.00
 FLOW LENGTH(FEET) = 330.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 3.78
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.20
 PIPE TRAVEL TIME(MIN.) = 1.46 Tc(MIN.) = 10.34
 LONGEST FLOWPATH FROM NODE 2407.00 TO NODE 2408.00 = 700.00 FEET.

FLOW PROCESS FROM NODE 2408.00 TO NODE 2408.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.34
 RAINFALL INTENSITY(INCH/HR) = 5.77
 TOTAL STREAM AREA(ACRES) = 1.71
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.20

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.85	9.36	6.152	5.82
2	6.20	10.34	5.771	1.71

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.47	9.36	6.152
2	25.76	10.34	5.771

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.47 Tc(MIN.) = 9.36
 TOTAL AREA(ACRES) = 7.5
 LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2408.00 = 878.00 FEET.

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FLOW PROCESS FROM NODE 2408.00 TO NODE 2404.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 873.00 DOWNSTREAM(FEET) = 867.00
 FLOW LENGTH(FEET) = 395.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.94
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 26.47
 PIPE TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 10.03
 LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2404.00 = 1273.00 FEET.

FLOW PROCESS FROM NODE 2404.00 TO NODE 2404.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.03
 RAINFALL INTENSITY(INCH/HR) = 5.89
 TOTAL STREAM AREA(ACRES) = 7.53
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 26.47

FLOW PROCESS FROM NODE 2403.00 TO NODE 2402.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 66.67
 UPSTREAM ELEVATION(FEET) = 885.00
 DOWNSTREAM ELEVATION(FEET) = 884.00
 ELEVATION DIFFERENCE(FEET) = 1.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.805
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.559
 SUBAREA RUNOFF(CFS) = 0.56
 TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.56

FLOW PROCESS FROM NODE 2402.00 TO NODE 2404.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 884.00  DOWNSTREAM ELEVATION(FEET) = 873.00
STREET LENGTH(FEET) = 425.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
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```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.03
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.31
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.09
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.84
STREET FLOW TRAVEL TIME(MIN.) = 2.29  Tc(MIN.) = 9.10
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.268
```

*USER SPECIFIED(SUBAREA):

```
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.93  SUBAREA RUNOFF(CFS) = 6.89
TOTAL AREA(ACRES) = 2.1  PEAK FLOW RATE(CFS) = 7.36
```

END OF SUBAREA STREET FLOW HYDRAULICS:

```
DEPTH(FEET) = 0.32  HALFSTREET FLOOD WIDTH(FEET) = 9.63
FLOW VELOCITY(FEET/SEC.) = 3.52  DEPTH*VELOCITY(FT*FT/SEC.) = 1.12
LONGEST FLOWPATH FROM NODE 2403.00 TO NODE 2404.00 = 491.67 FEET.
```

FLOW PROCESS FROM NODE 2404.00 TO NODE 2404.00 IS CODE = 1

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.10
RAINFALL INTENSITY(INCH/HR) = 6.27
TOTAL STREAM AREA(ACRES) = 2.06
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.36
```

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** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.47	10.03	5.887	7.53
2	7.36	9.10	6.268	2.06

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.22	9.10	6.268
2	33.38	10.03	5.887

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 33.38 Tc(MIN.) = 10.03

TOTAL AREA(ACRES) = 9.6

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2404.00 = 1273.00 FEET.

FLOW PROCESS FROM NODE 2404.00 TO NODE 2401.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 867.00 DOWNSTREAM(Feet) = 830.00

FLOW LENGTH(Feet) = 160.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES

PIPE-FLOW VELOCITY(Feet/Sec.) = 29.31

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 33.38

PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 10.12

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2401.00 = 1433.00 FEET.

FLOW PROCESS FROM NODE 2401.00 TO NODE 2380.00 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 830.00 DOWNSTREAM(Feet) = 829.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 95.00 CHANNEL SLOPE = 0.0105

CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.728

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

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S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 36.09
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.60
 AVERAGE FLOW DEPTH(FEET) = 1.37 TRAVEL TIME(MIN.) = 0.34
 Tc(MIN.) = 10.46
 SUBAREA AREA(ACRES) = 1.66 SUBAREA RUNOFF(CFS) = 5.42
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 TOTAL AREA(ACRES) = 11.2 PEAK FLOW RATE(CFS) = 36.73

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.38 FLOW VELOCITY(FEET/SEC.) = 4.63
 LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2380.00 = 1528.00 FEET.

FLOW PROCESS FROM NODE 2380.00 TO NODE 2380.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2390.00 TO NODE 2389.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 900.00
 DOWNSTREAM ELEVATION(FEET) = 895.00
 ELEVATION DIFFERENCE(FEET) = 5.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.579
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.592
 SUBAREA RUNOFF(CFS) = 0.98
 TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 0.98

FLOW PROCESS FROM NODE 2389.00 TO NODE 2389.50 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 895.00 DOWNSTREAM ELEVATION(FEET) = 876.00
 STREET LENGTH(FEET) = 565.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020

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OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.68
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.24
HALFSTREET FLOOD WIDTH(Feet) = 5.52
AVERAGE FLOW VELOCITY(Feet/Sec.) = 3.17
PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 0.75
STREET FLOW TRAVEL TIME(Min.) = 2.97 Tc(Min.) = 8.55
100 YEAR RAINFALL INTENSITY(Inch/Hour) = 6.526
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 0.91 SUBAREA RUNOFF(CFS) = 3.38
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 4.13

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.26 HALFSTREET FLOOD WIDTH(Feet) = 6.91
FLOW VELOCITY(Feet/Sec.) = 3.46 DEPTH*VELOCITY(Feet*Feet/Sec.) = 0.92
LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2389.50 = 665.00 Feet.

FLOW PROCESS FROM NODE 2389.50 TO NODE 2388.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 870.00 DOWNSTREAM(Feet) = 867.00
FLOW LENGTH(Feet) = 75.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(Inch) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.6 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 8.89
ESTIMATED PIPE DIAMETER(Inch) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.13
PIPE TRAVEL TIME(Min.) = 0.14 Tc(Min.) = 8.69
LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2388.00 = 740.00 Feet.

FLOW PROCESS FROM NODE 2388.00 TO NODE 2388.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.69
RAINFALL INTENSITY(INCH/HR) = 6.46
TOTAL STREAM AREA(ACRES) = 1.11
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.13

FLOW PROCESS FROM NODE 2387.00 TO NODE 2386.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 881.00
DOWNSTREAM ELEVATION(FEET) = 878.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914
SUBAREA RUNOFF(CFS) = 0.50
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 2386.00 TO NODE 2385.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 878.00 DOWNSTREAM ELEVATION(FEET) = 874.00
STREET LENGTH(FEET) = 170.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.44
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 5.78
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.69

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PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.65
STREET FLOW TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 7.39
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.168
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 0.95 SUBAREA RUNOFF(CFS) = 3.88
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 4.33

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.71
FLOW VELOCITY(FEET/SEC.) = 3.04 DEPTH*VELOCITY(FT*FT/SEC.) = 0.85
LONGEST FLOWPATH FROM NODE 2387.00 TO NODE 2385.00 = 265.00 FEET.

FLOW PROCESS FROM NODE 2385.00 TO NODE 2388.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 868.00 DOWNSTREAM(FEET) = 867.00
FLOW LENGTH(FEET) = 35.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.99
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.33
PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 7.46
LONGEST FLOWPATH FROM NODE 2387.00 TO NODE 2388.00 = 300.00 FEET.

FLOW PROCESS FROM NODE 2388.00 TO NODE 2388.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.46
RAINFALL INTENSITY(INCH/HR) = 7.12
TOTAL STREAM AREA(ACRES) = 1.06
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.33

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.13	8.69	6.457	1.11

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2	4.33	7.46	7.122	1.06

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.88	7.46	7.122
2	8.06	8.69	6.457

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.06 Tc(MIN.) = 8.69
TOTAL AREA(ACRES) = 2.2
LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2388.00 = 740.00 FEET.

FLOW PROCESS FROM NODE 2388.00 TO NODE 2384.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 867.00 DOWNSTREAM(Feet) = 859.00
FLOW LENGTH(Feet) = 200.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 10.68
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.06
PIPE TRAVEL TIME(MIN.) = 0.31 Tc(MIN.) = 9.00
LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2384.00 = 940.00 FEET.

FLOW PROCESS FROM NODE 2384.00 TO NODE 2384.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.00
RAINFALL INTENSITY(INCH/HR) = 6.31
TOTAL STREAM AREA(ACRES) = 2.17
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.06

FLOW PROCESS FROM NODE 2383.00 TO NODE 2382.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 97.50
 UPSTREAM ELEVATION(FEET) = 876.00
 DOWNSTREAM ELEVATION(FEET) = 872.00
 ELEVATION DIFFERENCE(FEET) = 4.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.885
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.302
 SUBAREA RUNOFF(CFS) = 0.95
 TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 0.95

FLOW PROCESS FROM NODE 2382.00 TO NODE 2384.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 872.00 DOWNSTREAM ELEVATION(FEET) = 865.00
 STREET LENGTH(FEET) = 150.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.39
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.18
 HALFSTREET FLOOD WIDTH(FEET) = 2.86
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.46
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.64
 STREET FLOW TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 6.61
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.705

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 0.20 SUBAREA RUNOFF(CFS) = 0.88
 TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 1.76

END OF SUBAREA STREET FLOW HYDRAULICS:

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DEPTH(FEET) = 0.20 HALFSTREET FLOOD WIDTH(FEET) = 3.72
FLOW VELOCITY(FEET/SEC.) = 3.42 DEPTH*VELOCITY(FT*FT/SEC.) = 0.69
LONGEST FLOWPATH FROM NODE 2383.00 TO NODE 2384.00 = 247.50 FEET.

FLOW PROCESS FROM NODE 2384.00 TO NODE 2384.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.61
RAINFALL INTENSITY(INCH/HR) = 7.70
TOTAL STREAM AREA(ACRES) = 0.40
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.76

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.06	9.00	6.312	2.17
2	1.76	6.61	7.705	0.40

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.36	6.61	7.705
2	9.49	9.00	6.312

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 9.49 Tc(MIN.) = 9.00
TOTAL AREA(ACRES) = 2.6
LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2384.00 = 940.00 FEET.

FLOW PROCESS FROM NODE 2384.00 TO NODE 2381.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 859.00 DOWNSTREAM(FEET) = 832.00
FLOW LENGTH(FEET) = 90.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 23.17

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ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 9.49
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 9.06
 LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2381.00 = 1030.00 FEET.

FLOW PROCESS FROM NODE 2381.00 TO NODE 2380.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 832.00 DOWNSTREAM(FEET) = 830.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 80.00 CHANNEL SLOPE = 0.0250
 CHANNEL FLOW THRU SUBAREA(CFS) = 9.49
 FLOW VELOCITY(FEET/SEC) = 3.90 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 9.41
 LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2380.00 = 1110.00 FEET.

FLOW PROCESS FROM NODE 2380.00 TO NODE 2380.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.49	9.41	6.135	2.57

LONGEST FLOWPATH FROM NODE 2390.00 TO NODE 2380.00 = 1110.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	36.73	10.46	5.728	11.25

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2380.00 = 1528.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	42.52	9.41	6.135
2	45.59	10.46	5.728

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 45.59 Tc(MIN.) = 10.46
 TOTAL AREA(ACRES) = 13.8

FLOW PROCESS FROM NODE 2380.00 TO NODE 2380.00 IS CODE = 12

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-----
>>>>>CLEAR MEMORY BANK # 2 <<<<<
=====
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*****
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FLOW PROCESS FROM NODE    2380.00 TO NODE    2380.00 IS CODE =  11
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```
>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====
```

```
** MAIN STREAM CONFLUENCE DATA **
```

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	45.59	10.46	5.728	13.82

LONGEST FLOWPATH FROM NODE 2413.00 TO NODE 2380.00 = 1528.00 FEET.

```
** MEMORY BANK # 1 CONFLUENCE DATA **
```

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	669.20	18.66	3.944	404.13

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2380.00 = 7932.00 FEET.

```
** PEAK FLOW RATE TABLE **
```

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	420.81	10.46	5.728
2	700.59	18.66	3.944

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 700.59 Tc(MIN.) = 18.66
TOTAL AREA(ACRES) = 418.0

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*****
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```
FLOW PROCESS FROM NODE    2380.00 TO NODE    2380.00 IS CODE =  12
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```
>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====
```

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*****
```

```
FLOW PROCESS FROM NODE    2380.00 TO NODE    2379.00 IS CODE =  52
-----
```

```
>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
```

```
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

ELEVATION DATA: UPSTREAM(FEET) = 837.00 DOWNSTREAM(FEET) = 825.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 170.00 CHANNEL SLOPE = 0.0706
CHANNEL FLOW THRU SUBAREA(CFS) = 700.59
FLOW VELOCITY(FEET/SEC) = 23.19 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

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                                P-25.TXT
TRAVEL TIME(MIN.) = 0.12    Tc(MIN.) = 18.78
LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2379.00 = 8102.00 FEET.

*****
FLOW PROCESS FROM NODE 2379.00 TO NODE 2379.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE 2378.00 TO NODE 2377.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
UPSTREAM ELEVATION(FEET) = 1175.00
DOWNSTREAM ELEVATION(FEET) = 1155.00
ELEVATION DIFFERENCE(FEET) = 20.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.548
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.749
SUBAREA RUNOFF(CFS) = 0.19
TOTAL AREA(ACRES) = 0.10    TOTAL RUNOFF(CFS) = 0.19

*****
FLOW PROCESS FROM NODE 2377.00 TO NODE 2376.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1155.00    DOWNSTREAM(FEET) = 1070.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 300.00    CHANNEL SLOPE = 0.2833
CHANNEL BASE(FEET) = 3.00    "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030    MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.126
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.83
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.50
AVERAGE FLOW DEPTH(FEET) = 0.10    TRAVEL TIME(MIN.) = 0.91
Tc(MIN.) = 7.46
SUBAREA AREA(ACRES) = 1.84    SUBAREA RUNOFF(CFS) = 3.28
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 1.9    PEAK FLOW RATE(CFS) = 3.46

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P-25.TXT

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.15 FLOW VELOCITY(FEET/SEC.) = 7.00

LONGEST FLOWPATH FROM NODE 2378.00 TO NODE 2376.00 = 385.00 FEET.

FLOW PROCESS FROM NODE 2376.00 TO NODE 2375.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1070.00 DOWNSTREAM(FEET) = 955.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 605.00 CHANNEL SLOPE = 0.1901

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.529

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 11.96

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 9.30

AVERAGE FLOW DEPTH(FEET) = 0.35 TRAVEL TIME(MIN.) = 1.08

Tc(MIN.) = 8.54

SUBAREA AREA(ACRES) = 10.41 SUBAREA RUNOFF(CFS) = 16.99

AREA-AVERAGE RUNOFF COEFFICIENT = 0.250

TOTAL AREA(ACRES) = 12.4 PEAK FLOW RATE(CFS) = 20.16

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.47 FLOW VELOCITY(FEET/SEC.) = 10.94

LONGEST FLOWPATH FROM NODE 2378.00 TO NODE 2375.00 = 990.00 FEET.

FLOW PROCESS FROM NODE 2375.00 TO NODE 2374.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 955.00 DOWNSTREAM(FEET) = 885.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 455.00 CHANNEL SLOPE = 0.1538

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.230

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2600

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 33.21

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 11.80

AVERAGE FLOW DEPTH(FEET) = 0.65 TRAVEL TIME(MIN.) = 0.64

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Tc(MIN.) = 9.18
 SUBAREA AREA(ACRES) = 16.11 SUBAREA RUNOFF(CFS) = 26.10
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.256
 TOTAL AREA(ACRES) = 28.5 PEAK FLOW RATE(CFS) = 45.33

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.77 FLOW VELOCITY(FEET/SEC.) = 12.89
 LONGEST FLOWPATH FROM NODE 2378.00 TO NODE 2374.00 = 1445.00 FEET.

FLOW PROCESS FROM NODE 2374.00 TO NODE 2379.20 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 885.00 DOWNSTREAM(FEET) = 855.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 420.00 CHANNEL SLOPE = 0.0714
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.944

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 49.10
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 10.08
 AVERAGE FLOW DEPTH(FEET) = 0.98 TRAVEL TIME(MIN.) = 0.69
 Tc(MIN.) = 9.88
 SUBAREA AREA(ACRES) = 4.23 SUBAREA RUNOFF(CFS) = 7.54
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.261
 TOTAL AREA(ACRES) = 32.7 PEAK FLOW RATE(CFS) = 50.79

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 1.00 FLOW VELOCITY(FEET/SEC.) = 10.13
 LONGEST FLOWPATH FROM NODE 2378.00 TO NODE 2379.20 = 1865.00 FEET.

FLOW PROCESS FROM NODE 2379.20 TO NODE 2379.20 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

=====

FLOW PROCESS FROM NODE 2373.00 TO NODE 2372.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

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S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 925.00
DOWNSTREAM ELEVATION(FEET) = 924.00
ELEVATION DIFFERENCE(FEET) = 1.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.663
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.663
SUBAREA RUNOFF(CFS) = 0.39
TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.39

FLOW PROCESS FROM NODE 2372.00 TO NODE 2371.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 924.00 DOWNSTREAM ELEVATION(FEET) = 914.00
STREET LENGTH(FEET) = 290.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.89
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 5.72
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.25
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.78
STREET FLOW TRAVEL TIME(MIN.) = 1.49 Tc(MIN.) = 8.15
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.729

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.30 SUBAREA RUNOFF(CFS) = 4.99
TOTAL AREA(ACRES) = 1.4 PEAK FLOW RATE(CFS) = 5.33

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 7.78
FLOW VELOCITY(FEET/SEC.) = 3.69 DEPTH*VELOCITY(FT*FT/SEC.) = 1.04
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2371.00 = 355.00 FEET.

P-25.TXT

FLOW PROCESS FROM NODE 2371.00 TO NODE 2370.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	908.00	DOWNSTREAM(FEET) =	906.00
FLOW LENGTH(FEET) =	310.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	10.7 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	4.85		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	5.33		
PIPE TRAVEL TIME(MIN.) =	1.07	Tc(MIN.) =	9.21
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2370.00 =	665.00 FEET.		

FLOW PROCESS FROM NODE 2370.00 TO NODE 2370.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	9.21
RAINFALL INTENSITY(INCH/HR) =	6.22
TOTAL STREAM AREA(ACRES) =	1.39
PEAK FLOW RATE(CFS) AT CONFLUENCE =	5.33

FLOW PROCESS FROM NODE 2369.00 TO NODE 2368.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):	
USER-SPECIFIED RUNOFF COEFFICIENT =	.5700
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	95.00
UPSTREAM ELEVATION(FEET) =	920.00
DOWNSTREAM ELEVATION(FEET) =	917.00
ELEVATION DIFFERENCE(FEET) =	3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.914
SUBAREA RUNOFF(CFS) =	0.50
TOTAL AREA(ACRES) =	0.11
TOTAL RUNOFF(CFS) =	0.50

FLOW PROCESS FROM NODE 2368.00 TO NODE 2370.00 IS CODE = 62

P-25.TXT

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 917.00 DOWNSTREAM ELEVATION(FEET) = 912.00
 STREET LENGTH(FEET) = 360.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.20
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.30
 HALFSTREET FLOOD WIDTH(FEET) = 8.57
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.46
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.73
 STREET FLOW TRAVEL TIME(MIN.) = 2.44 Tc(MIN.) = 8.78
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.415

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
 SUBAREA AREA(ACRES) = 2.01 SUBAREA RUNOFF(CFS) = 7.35
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 7.75

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 11.22
 FLOW VELOCITY(FEET/SEC.) = 2.82 DEPTH*VELOCITY(FT*FT/SEC.) = 0.99
 LONGEST FLOWPATH FROM NODE 2369.00 TO NODE 2370.00 = 455.00 FEET.

FLOW PROCESS FROM NODE 2370.00 TO NODE 2370.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.78
 RAINFALL INTENSITY(INCH/HR) = 6.41
 TOTAL STREAM AREA(ACRES) = 2.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.75

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.33	9.21	6.216	1.39
2	7.75	8.78	6.415	2.12

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	12.83	8.78	6.415
2	12.84	9.21	6.216

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 12.84 Tc(MIN.) = 9.21
TOTAL AREA(ACRES) = 3.5
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2370.00 = 665.00 FEET.

FLOW PROCESS FROM NODE 2370.00 TO NODE 2367.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 906.00 DOWNSTREAM(Feet) = 894.00
FLOW LENGTH(Feet) = 300.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.5 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 11.98
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 12.84
PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 9.63
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2367.00 = 965.00 FEET.

FLOW PROCESS FROM NODE 2367.00 TO NODE 2367.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.63
RAINFALL INTENSITY(INCH/HR) = 6.04
TOTAL STREAM AREA(ACRES) = 3.51
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.84

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FLOW PROCESS FROM NODE 2366.00 TO NODE 2365.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58

UPSTREAM ELEVATION(FEET) = 911.00

DOWNSTREAM ELEVATION(FEET) = 909.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.391

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.872

SUBAREA RUNOFF(CFS) = 0.27

TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.27

FLOW PROCESS FROM NODE 2365.00 TO NODE 2367.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 909.00 DOWNSTREAM ELEVATION(FEET) = 900.00

STREET LENGTH(FEET) = 405.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.67

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.32

HALFSTREET FLOOD WIDTH(FEET) = 9.90

AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.34

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.08

STREET FLOW TRAVEL TIME(MIN.) = 2.02 Tc(MIN.) = 8.41

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.594

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.570

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 SUBAREA AREA(ACRES) = 1.80 SUBAREA RUNOFF(CFS) = 6.77
 TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 6.99

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 12.97
 FLOW VELOCITY(FEET/SEC.) = 3.88 DEPTH*VELOCITY(FT*FT/SEC.) = 1.50
 LONGEST FLOWPATH FROM NODE 2366.00 TO NODE 2367.00 = 486.58 FEET.

FLOW PROCESS FROM NODE 2367.00 TO NODE 2367.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.41
 RAINFALL INTENSITY(INCH/HR) = 6.59
 TOTAL STREAM AREA(ACRES) = 1.86
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.99

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.84	9.63	6.041	3.51
2	6.99	8.41	6.594	1.86

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	18.76	8.41	6.594
2	19.25	9.63	6.041

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 19.25 Tc(MIN.) = 9.63
 TOTAL AREA(ACRES) = 5.4
 LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2367.00 = 965.00 FEET.

FLOW PROCESS FROM NODE 2367.00 TO NODE 2364.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 894.00 DOWNSTREAM(FEET) = 887.00

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FLOW LENGTH(FEET) = 205.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.47
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 19.25
PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 9.91
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2364.00 = 1170.00 FEET.

FLOW PROCESS FROM NODE 2364.00 TO NODE 2364.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.91
RAINFALL INTENSITY(INCH/HR) = 5.93
TOTAL STREAM AREA(ACRES) = 5.37
PEAK FLOW RATE(CFS) AT CONFLUENCE = 19.25

FLOW PROCESS FROM NODE 2363.00 TO NODE 2362.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 83.33
UPSTREAM ELEVATION(FEET) = 905.00
DOWNSTREAM ELEVATION(FEET) = 903.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.505
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.782
SUBAREA RUNOFF(CFS) = 0.44
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.44

FLOW PROCESS FROM NODE 2362.00 TO NODE 2364.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 903.00 DOWNSTREAM ELEVATION(FEET) = 894.00
STREET LENGTH(FEET) = 230.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

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INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.51
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.27
HALFSTREET FLOOD WIDTH(Feet) = 7.31
AVERAGE FLOW VELOCITY(Feet/Sec.) = 3.84
PRODUCT OF DEPTH&VELOCITY(Feet*Feet/Sec.) = 1.05
STREET FLOW TRAVEL TIME(Min.) = 1.00 Tc(Min.) = 7.50
100 YEAR RAINFALL INTENSITY(Inch/Hour) = 7.098
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.02 SUBAREA RUNOFF(CFS) = 4.13
TOTAL AREA(ACRES) = 1.1 PEAK FLOW RATE(CFS) = 4.53

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.32 HALFSTREET FLOOD WIDTH(Feet) = 9.63
FLOW VELOCITY(Feet/Sec.) = 4.33 DEPTH*VELOCITY(Feet*Feet/Sec.) = 1.38
LONGEST FLOWPATH FROM NODE 2363.00 TO NODE 2364.00 = 313.33 Feet.

FLOW PROCESS FROM NODE 2364.00 TO NODE 2364.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(Min.) = 7.50
RAINFALL INTENSITY(Inch/Hr) = 7.10
TOTAL STREAM AREA(ACRES) = 1.12
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.53

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (Inch/Hour)	AREA (ACRE)
1	19.25	9.91	5.933	5.37
2	4.53	7.50	7.098	1.12

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.62	7.50	7.098
2	23.04	9.91	5.933

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 23.04 Tc(MIN.) = 9.91

TOTAL AREA(ACRES) = 6.5

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2364.00 = 1170.00 FEET.

FLOW PROCESS FROM NODE 2364.00 TO NODE 2361.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 888.00 DOWNSTREAM(FEET) = 884.00

FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 13.78

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 23.04

PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 10.03

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2361.00 = 1270.00 FEET.

FLOW PROCESS FROM NODE 2361.00 TO NODE 2361.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 10.03

RAINFALL INTENSITY(INCH/HR) = 5.89

TOTAL STREAM AREA(ACRES) = 6.49

PEAK FLOW RATE(CFS) AT CONFLUENCE = 23.04

FLOW PROCESS FROM NODE 2360.00 TO NODE 2359.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5700

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 898.00
DOWNSTREAM ELEVATION(FEET) = 895.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.338
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.914
SUBAREA RUNOFF(CFS) = 0.63
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.63

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FLOW PROCESS FROM NODE 2359.00 TO NODE 2361.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 895.00 DOWNSTREAM ELEVATION(FEET) = 890.00
STREET LENGTH(FEET) = 195.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.44
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 7.97
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.23
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.92
STREET FLOW TRAVEL TIME(MIN.) = 1.00 Tc(MIN.) = 7.34
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.197
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 0.88 SUBAREA RUNOFF(CFS) = 3.61
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 4.18

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.16
FLOW VELOCITY(FEET/SEC.) = 3.64 DEPTH*VELOCITY(FT*FT/SEC.) = 1.20
LONGEST FLOWPATH FROM NODE 2360.00 TO NODE 2361.00 = 290.00 FEET.

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FLOW PROCESS FROM NODE 2361.00 TO NODE 2361.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	7.34
RAINFALL INTENSITY(INCH/HR) =	7.20
TOTAL STREAM AREA(ACRES) =	1.02
PEAK FLOW RATE(CFS) AT CONFLUENCE =	4.18

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	23.04	10.03	5.887	6.49
2	4.18	7.34	7.197	1.02

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	23.03	7.34	7.197
2	26.46	10.03	5.887

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) =	26.46	Tc(MIN.) =	10.03
TOTAL AREA(ACRES) =	7.5		
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2361.00 =	1270.00	FEET.	

FLOW PROCESS FROM NODE 2361.00 TO NODE 2358.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	884.00	DOWNSTREAM(FEET) =	879.00
FLOW LENGTH(FEET) =	145.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS	16.3	INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	13.20		
ESTIMATED PIPE DIAMETER(INCH) =	21.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	26.46		
PIPE TRAVEL TIME(MIN.) =	0.18	Tc(MIN.) =	10.21
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2358.00 =	1415.00	FEET.	

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FLOW PROCESS FROM NODE 2358.00 TO NODE 2358.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	10.21
RAINFALL INTENSITY(INCH/HR) =	5.82
TOTAL STREAM AREA(ACRES) =	7.51
PEAK FLOW RATE(CFS) AT CONFLUENCE =	26.46

FLOW PROCESS FROM NODE 2357.00 TO NODE 2356.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.5700
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(Feet) =	85.00
UPSTREAM ELEVATION(Feet) =	895.00
DOWNSTREAM ELEVATION(Feet) =	892.40
ELEVATION DIFFERENCE(Feet) =	2.60
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.059
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	8.147
SUBAREA RUNOFF(CFS) =	0.46
TOTAL AREA(ACRES) =	0.10
TOTAL RUNOFF(CFS) =	0.46

FLOW PROCESS FROM NODE 2356.00 TO NODE 2358.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(Feet) =	892.40	DOWNSTREAM ELEVATION(Feet) =	885.00
STREET LENGTH(Feet) =	370.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(Feet) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(Feet) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section =	0.0200

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.84
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 7.58
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.78
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.77
STREET FLOW TRAVEL TIME(MIN.) = 2.22 Tc(MIN.) = 8.28
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.660
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.570
SUBAREA AREA(ACRES) = 1.77 SUBAREA RUNOFF(CFS) = 6.72
TOTAL AREA(ACRES) = 1.9 PEAK FLOW RATE(CFS) = 7.10

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 9.97
FLOW VELOCITY(FEET/SEC.) = 3.19 DEPTH*VELOCITY(FT*FT/SEC.) = 1.04
LONGEST FLOWPATH FROM NODE 2357.00 TO NODE 2358.00 = 455.00 FEET.

FLOW PROCESS FROM NODE 2358.00 TO NODE 2358.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.28
RAINFALL INTENSITY(INCH/HR) = 6.66
TOTAL STREAM AREA(ACRES) = 1.87
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.10

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.46	10.21	5.819	7.51
2	7.10	8.28	6.660	1.87

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.21	8.28	6.660
2	32.66	10.21	5.819

P-25.TXT

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 32.66 Tc(MIN.) = 10.21

TOTAL AREA(ACRES) = 9.4

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2358.00 = 1415.00 FEET.

FLOW PROCESS FROM NODE 2358.00 TO NODE 2555.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 879.00 DOWNSTREAM(FEET) = 865.00

FLOW LENGTH(FEET) = 205.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 18.27

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 32.66

PIPE TRAVEL TIME(MIN.) = 0.19 Tc(MIN.) = 10.40

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2555.00 = 1620.00 FEET.

FLOW PROCESS FROM NODE 2555.00 TO NODE 2554.80 IS CODE = 51

>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 865.00 DOWNSTREAM(FEET) = 864.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 50.00 CHANNEL SLOPE = 0.0200

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.699

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 33.33

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.69

AVERAGE FLOW DEPTH(FEET) = 1.12 TRAVEL TIME(MIN.) = 0.15

Tc(MIN.) = 10.54

SUBAREA AREA(ACRES) = 0.78 SUBAREA RUNOFF(CFS) = 1.33

AREA-AVERAGE RUNOFF COEFFICIENT = 0.549

TOTAL AREA(ACRES) = 10.2 PEAK FLOW RATE(CFS) = 32.66

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.11 FLOW VELOCITY(FEET/SEC.) = 5.64

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2554.80 = 1670.00 FEET.

FLOW PROCESS FROM NODE 2554.80 TO NODE 2379.20 IS CODE = 51

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>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 864.00 DOWNSTREAM(FEET) = 855.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 300.00 CHANNEL SLOPE = 0.0300
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.455
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2800
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 36.44
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 6.75
AVERAGE FLOW DEPTH(FEET) = 1.06 TRAVEL TIME(MIN.) = 0.74
Tc(MIN.) = 11.28
SUBAREA AREA(ACRES) = 4.94 SUBAREA RUNOFF(CFS) = 7.55
AREA-AVERAGE RUNOFF COEFFICIENT = 0.461
TOTAL AREA(ACRES) = 15.1 PEAK FLOW RATE(CFS) = 37.99

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 1.08 FLOW VELOCITY(FEET/SEC.) = 6.83
LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2379.20 = 1970.00 FEET.

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FLOW PROCESS FROM NODE 2379.20 TO NODE 2379.20 IS CODE = 11

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>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
=====

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** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	37.99	11.28	5.455	15.10

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2379.20 = 1970.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	50.79	9.88	5.944	32.69

LONGEST FLOWPATH FROM NODE 2378.00 TO NODE 2379.20 = 1865.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	84.05	9.88	5.944
2	84.60	11.28	5.455

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 84.60 Tc(MIN.) = 11.28
TOTAL AREA(ACRES) = 47.8

FLOW PROCESS FROM NODE 2379.20 TO NODE 2379.20 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

=====

FLOW PROCESS FROM NODE 2379.20 TO NODE 2379.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 855.00 DOWNSTREAM(FEET) = 825.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 610.00 CHANNEL SLOPE = 0.0492

CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000

MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.167

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3000

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 88.79

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 10.27

AVERAGE FLOW DEPTH(FEET) = 1.46 TRAVEL TIME(MIN.) = 0.99

Tc(MIN.) = 12.27

SUBAREA AREA(ACRES) = 5.40 SUBAREA RUNOFF(CFS) = 8.37

AREA-AVERAGE RUNOFF COEFFICIENT = 0.322

TOTAL AREA(ACRES) = 53.2 PEAK FLOW RATE(CFS) = 88.51

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 1.45 FLOW VELOCITY(FEET/SEC.) = 10.30

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2379.00 = 2580.00 FEET.

FLOW PROCESS FROM NODE 2379.00 TO NODE 2379.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	88.51	12.27	5.167	53.19

LONGEST FLOWPATH FROM NODE 2373.00 TO NODE 2379.00 = 2580.00 FEET.

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** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	700.59	18.78	3.927	417.95

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2379.00 = 8102.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	546.35	12.27	5.167
2	767.86	18.78	3.927

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 767.86 Tc(MIN.) = 18.78
TOTAL AREA(ACRES) = 471.1

FLOW PROCESS FROM NODE 2379.00 TO NODE 2379.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<

=====

FLOW PROCESS FROM NODE 2379.00 TO NODE 2379.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 18.78
RAINFALL INTENSITY(INCH/HR) = 3.93
TOTAL STREAM AREA(ACRES) = 471.14
PEAK FLOW RATE(CFS) AT CONFLUENCE = 767.86

FLOW PROCESS FROM NODE 2370.00 TO NODE 2369.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1065.00
DOWNSTREAM ELEVATION(FEET) = 1020.00
ELEVATION DIFFERENCE(FEET) = 45.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.538
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.633
SUBAREA RUNOFF(CFS) = 0.40
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.40

FLOW PROCESS FROM NODE 2369.00 TO NODE 2368.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1020.00 DOWNSTREAM(FEET) = 860.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 360.00 CHANNEL SLOPE = 0.4444
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2193 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.40
FLOW VELOCITY(FEET/SEC) = 2.62 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.29 Tc(MIN.) = 7.83
LONGEST FLOWPATH FROM NODE 2370.00 TO NODE 2368.00 = 455.00 FEET.

FLOW PROCESS FROM NODE 2369.00 TO NODE 2368.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.907
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4200
SUBAREA AREA(ACRES) = 0.93 SUBAREA RUNOFF(CFS) = 2.70
TOTAL AREA(ACRES) = 1.0 TOTAL RUNOFF(CFS) = 3.02
TC(MIN.) = 7.83

FLOW PROCESS FROM NODE 2368.00 TO NODE 2367.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 865.00 DOWNSTREAM(FEET) = 830.00
FLOW LENGTH(FEET) = 115.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.68
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.02
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 7.94

P-25.TXT

LONGEST FLOWPATH FROM NODE 2370.00 TO NODE 2367.00 = 570.00 FEET.

FLOW PROCESS FROM NODE 2367.00 TO NODE 2379.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 830.00 DOWNSTREAM(FEET) = 825.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 110.00 CHANNEL SLOPE = 0.0455
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0455 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 3.02
 FLOW VELOCITY(FEET/SEC) = 1.72 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 1.06 Tc(MIN.) = 9.00
 LONGEST FLOWPATH FROM NODE 2370.00 TO NODE 2379.00 = 680.00 FEET.

FLOW PROCESS FROM NODE 2379.00 TO NODE 2379.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.00
 RAINFALL INTENSITY(INCH/HR) = 6.31
 TOTAL STREAM AREA(ACRES) = 1.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.02

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	767.86	18.78	3.927	471.14
2	3.02	9.00	6.310	1.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	371.12	9.00	6.310
2	769.74	18.78	3.927

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 769.74 Tc(MIN.) = 18.78
 TOTAL AREA(ACRES) = 472.2

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                                P-25.TXT
LONGEST FLOWPATH FROM NODE    2599.00 TO NODE    2379.00 =    8102.00 FEET.

*****
FLOW PROCESS FROM NODE    2379.00 TO NODE    2378.00 IS CODE =    52
-----
>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) =    825.00  DOWNSTREAM(FEET) =    815.00
CHANNEL LENGTH THRU SUBAREA(FEET) =    655.00  CHANNEL SLOPE =    0.0153
CHANNEL FLOW THRU SUBAREA(CFS) =    769.74
FLOW VELOCITY(FEET/SEC) =    11.12 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) =    0.98  Tc(MIN.) =    19.76
LONGEST FLOWPATH FROM NODE    2599.00 TO NODE    2378.00 =    8757.00 FEET.

*****
FLOW PROCESS FROM NODE    2379.00 TO NODE    2378.00 IS CODE =    81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
  100 YEAR RAINFALL INTENSITY(INCH/HOUR) =    3.800
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) =    0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3901
SUBAREA AREA(ACRES) =    13.91  SUBAREA RUNOFF(CFS) =    22.20
TOTAL AREA(ACRES) =    486.1  TOTAL RUNOFF(CFS) =    769.74
TC(MIN.) =    19.76
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

*****
FLOW PROCESS FROM NODE    2378.00 TO NODE    2378.00 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS =    3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM    1 ARE:
TIME OF CONCENTRATION(MIN.) =    19.76
RAINFALL INTENSITY(INCH/HR) =    3.80
TOTAL STREAM AREA(ACRES) =    486.09
PEAK FLOW RATE(CFS) AT CONFLUENCE =    769.74

*****
FLOW PROCESS FROM NODE    2366.00 TO NODE    2365.00 IS CODE =    21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1180.00
DOWNSTREAM ELEVATION(FEET) = 1175.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.944
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.248
SUBAREA RUNOFF(CFS) = 0.45
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.45

FLOW PROCESS FROM NODE 2365.00 TO NODE 2364.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1175.00	DOWNSTREAM(FEET) =	860.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	665.00	CHANNEL SLOPE =	0.4737
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.2224 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION			
CHANNEL FLOW THRU SUBAREA(CFS) =	0.45		
FLOW VELOCITY(FEET/SEC) =	2.64 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	4.20	Tc(MIN.) =	10.14
LONGEST FLOWPATH FROM NODE	2366.00	TO NODE	2364.00 =
			745.00 FEET.

FLOW PROCESS FROM NODE 2365.00 TO NODE 2364.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.844		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.4200		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.4200		
SUBAREA AREA(ACRES) =	3.34	SUBAREA RUNOFF(CFS) =	8.20
TOTAL AREA(ACRES) =	3.5	TOTAL RUNOFF(CFS) =	8.52
TC(MIN.) =	10.14		

FLOW PROCESS FROM NODE 2364.00 TO NODE 2363.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	860.00	DOWNSTREAM(FEET) =	842.00

P-25.TXT

FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.72
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.52
PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 10.23
LONGEST FLOWPATH FROM NODE 2366.00 TO NODE 2363.00 = 845.00 FEET.

FLOW PROCESS FROM NODE 2363.00 TO NODE 2378.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 842.00 DOWNSTREAM(FEET) = 815.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 450.00 CHANNEL SLOPE = 0.0600
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0600 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 8.52
FLOW VELOCITY(FEET/SEC) = 2.80 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.68 Tc(MIN.) = 12.91
LONGEST FLOWPATH FROM NODE 2366.00 TO NODE 2378.00 = 1295.00 FEET.

FLOW PROCESS FROM NODE 2378.00 TO NODE 2378.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 12.91
RAINFALL INTENSITY(INCH/HR) = 5.00
TOTAL STREAM AREA(ACRES) = 3.47
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.52

FLOW PROCESS FROM NODE 2362.00 TO NODE 2361.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1175.00
DOWNSTREAM ELEVATION(FEET) = 1165.00
ELEVATION DIFFERENCE(FEET) = 10.00

P-25.TXT

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.082
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.125
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 2361.00 TO NODE 2360.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1165.00 DOWNSTREAM(Feet) = 865.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 580.00 CHANNEL SLOPE = 0.5172
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2259 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.38
FLOW VELOCITY(Feet/Sec) = 2.66 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.63 Tc(MIN.) = 8.71
LONGEST FLOWPATH FROM NODE 2362.00 TO NODE 2360.00 = 660.00 FEET.

FLOW PROCESS FROM NODE 2361.00 TO NODE 2360.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.445
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4200
SUBAREA AREA(ACRES) = 2.99 SUBAREA RUNOFF(CFS) = 8.09
TOTAL AREA(ACRES) = 3.1 TOTAL RUNOFF(CFS) = 8.36
TC(MIN.) = 8.71

FLOW PROCESS FROM NODE 2360.00 TO NODE 2359.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 865.00 DOWNSTREAM(Feet) = 839.00
FLOW LENGTH(Feet) = 100.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.9 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 21.23
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

P-25.TXT

PIPE-FLOW(CFS) = 8.36
 PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 8.79
 LONGEST FLOWPATH FROM NODE 2362.00 TO NODE 2359.00 = 760.00 FEET.

FLOW PROCESS FROM NODE 2359.00 TO NODE 2378.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 839.00 DOWNSTREAM(FEET) = 815.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 310.00 CHANNEL SLOPE = 0.0774
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0774 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 8.36
 FLOW VELOCITY(FEET/SEC) = 3.16 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 1.63 Tc(MIN.) = 10.43
 LONGEST FLOWPATH FROM NODE 2362.00 TO NODE 2378.00 = 1070.00 FEET.

FLOW PROCESS FROM NODE 2378.00 TO NODE 2378.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.43
 RAINFALL INTENSITY(INCH/HR) = 5.74
 TOTAL STREAM AREA(ACRES) = 3.09
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.36

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	769.74	19.76	3.800	486.09
2	8.52	12.91	5.002	3.47
3	8.36	10.43	5.740	3.09

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	524.85	10.43	5.740
2	600.65	12.91	5.002
3	781.75	19.76	3.800

P-25.TXT

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 781.75 Tc(MIN.) = 19.76

TOTAL AREA(ACRES) = 492.7

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 2378.00 = 8757.00 FEET.

FLOW PROCESS FROM NODE 2378.00 TO NODE 25.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 815.00 DOWNSTREAM(FEET) = 795.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 935.00 CHANNEL SLOPE = 0.0214

CHANNEL FLOW THRU SUBAREA(CFS) = 781.75

FLOW VELOCITY(FEET/SEC) = 13.23 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 1.18 Tc(MIN.) = 20.94

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 25.00 = 9692.00 FEET.

FLOW PROCESS FROM NODE 2378.00 TO NODE 25.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.661

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4200

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3908

SUBAREA AREA(ACRES) = 4.80 SUBAREA RUNOFF(CFS) = 7.38

TOTAL AREA(ACRES) = 497.5 TOTAL RUNOFF(CFS) = 781.75

TC(MIN.) = 20.94

NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

FLOW PROCESS FROM NODE 25.00 TO NODE 25.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 20.94

RAINFALL INTENSITY(INCH/HR) = 3.66

TOTAL STREAM AREA(ACRES) = 497.45

PEAK FLOW RATE(CFS) AT CONFLUENCE = 781.75

FLOW PROCESS FROM NODE 25.30 TO NODE 25.20 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3800

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00

UPSTREAM ELEVATION(FEET) = 1175.00

DOWNSTREAM ELEVATION(FEET) = 1150.00

ELEVATION DIFFERENCE(FEET) = 25.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.707

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.467

SUBAREA RUNOFF(CFS) = 0.93

TOTAL AREA(ACRES) = 0.29 TOTAL RUNOFF(CFS) = 0.93

FLOW PROCESS FROM NODE 25.20 TO NODE 25.10 IS CODE = 53

 >>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1150.00 DOWNSTREAM(FEET) = 935.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 590.00 CHANNEL SLOPE = 0.3644

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .2078 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION

CHANNEL FLOW THRU SUBAREA(CFS) = 0.93

FLOW VELOCITY(FEET/SEC) = 2.55 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 3.85 T_c(MIN.) = 9.56

LONGEST FLOWPATH FROM NODE 25.30 TO NODE 25.10 = 680.00 FEET.

FLOW PROCESS FROM NODE 25.20 TO NODE 25.10 IS CODE = 81

 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.071

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3800

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3800

SUBAREA AREA(ACRES) = 9.55 SUBAREA RUNOFF(CFS) = 22.03

TOTAL AREA(ACRES) = 9.8 TOTAL RUNOFF(CFS) = 22.70

TC(MIN.) = 9.56

FLOW PROCESS FROM NODE 25.10 TO NODE 25.00 IS CODE = 53

 >>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 935.00 DOWNSTREAM(FEET) = 795.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 2310.00 CHANNEL SLOPE = 0.0606
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0606 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 22.70
 FLOW VELOCITY(FEET/SEC) = 3.90 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 9.87 Tc(MIN.) = 19.43
 LONGEST FLOWPATH FROM NODE 25.30 TO NODE 25.00 = 2990.00 FEET.

FLOW PROCESS FROM NODE 25.10 TO NODE 25.00 IS CODE = 81

 >>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.842
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3600
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3649
 SUBAREA AREA(ACRES) = 30.51 SUBAREA RUNOFF(CFS) = 42.20
 TOTAL AREA(ACRES) = 40.3 TOTAL RUNOFF(CFS) = 56.56
 TC(MIN.) = 19.43

FLOW PROCESS FROM NODE 25.00 TO NODE 25.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 19.43
 RAINFALL INTENSITY(INCH/HR) = 3.84
 TOTAL STREAM AREA(ACRES) = 40.35
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 56.56

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	781.75	20.94	3.661	497.45
2	56.56	19.43	3.842	40.35

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	801.51	19.43	3.842
2	835.64	20.94	3.661

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 835.64 Tc(MIN.) = 20.94

TOTAL AREA(ACRES) = 537.8

LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 25.00 = 9692.00 FEET.

FLOW PROCESS FROM NODE 25.00 TO NODE 24.90 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 795.00 DOWNSTREAM(FEET) = 763.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1270.00 CHANNEL SLOPE = 0.0252
 CHANNEL FLOW THRU SUBAREA(CFS) = 835.64
 FLOW VELOCITY(FEET/SEC) = 14.67 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 1.44 Tc(MIN.) = 22.38
 LONGEST FLOWPATH FROM NODE 2599.00 TO NODE 24.90 = 10962.00 FEET.

FLOW PROCESS FROM NODE 25.00 TO NODE 24.90 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.507
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4100
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3894
 SUBAREA AREA(ACRES) = 15.21 SUBAREA RUNOFF(CFS) = 21.87
 TOTAL AREA(ACRES) = 553.0 TOTAL RUNOFF(CFS) = 835.64
 TC(MIN.) = 22.38
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 553.0 TC(MIN.) = 22.38
 PEAK FLOW RATE(CFS) = 835.64

END OF RATIONAL METHOD ANALYSIS



P-25.TXT

CANYON DETENTION – NODE 2472

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 2/15/2017

TIME OF CONCENTRATION 16 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 81.7 ACRES

RUNOFF COEFFICIENT 0.41

PEAK DISCHARGE 151.22 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 16 DISCHARGE (CFS) = 7

TIME (MIN) = 32 DISCHARGE (CFS) = 7.4

TIME (MIN) = 48 DISCHARGE (CFS) = 7.6

TIME (MIN) = 64 DISCHARGE (CFS) = 8.2

TIME (MIN) = 80 DISCHARGE (CFS) = 8.5

TIME (MIN) = 96 DISCHARGE (CFS) = 9.2

TIME (MIN) = 112 DISCHARGE (CFS) = 9.7

TIME (MIN) = 128 DISCHARGE (CFS) = 10.7

TIME (MIN) = 144 DISCHARGE (CFS) = 11.4

TIME (MIN) = 160 DISCHARGE (CFS) = 13

TIME (MIN) = 176 DISCHARGE (CFS) = 14.1

TIME (MIN) = 192 DISCHARGE (CFS) = 17.3

TIME (MIN) = 208 DISCHARGE (CFS) = 19.7

TIME (MIN) = 224 DISCHARGE (CFS) = 28.9

TIME (MIN) = 240 DISCHARGE (CFS) = 35.4

TIME (MIN) = 256 DISCHARGE (CFS) = 151.22

TIME (MIN) = 272 DISCHARGE (CFS) = 23.2

TIME (MIN) = 288 DISCHARGE (CFS) = 15.5

TIME (MIN) = 304 DISCHARGE (CFS) = 12.1

TIME (MIN) = 320 DISCHARGE (CFS) = 10.2

TIME (MIN) = 336 DISCHARGE (CFS) = 8.8

TIME (MIN) = 352 DISCHARGE (CFS) = 7.9

TIME (MIN) = 368 DISCHARGE (CFS) = 7.2

TIME (MIN) = 384 DISCHARGE (CFS) = 0

Detention Basin 25 C Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 151.22 cfs

Time of Concentration= 16 minutes

HEC-HMS Time Interval Used= 4 minutes

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0		0.0
4		1.8	1.8
8		3.5	3.5
12		5.3	5.3
16	7		7.0
20		7.1	7.1
24		7.2	7.2
28		7.3	7.3
32	7.4		7.4
36		7.5	7.5
40		7.5	7.5
44		7.6	7.6
48	7.6		7.6
52		7.8	7.8
56		7.9	7.9
60		8.1	8.1
64	8.2		8.2
68		8.3	8.3
72		8.4	8.4
76		8.4	8.4
80	8.5		8.5
84		8.7	8.7
88		8.9	8.9
92		9.0	9.0
96	9.2		9.2
100		9.3	9.3
104		9.5	9.5
108		9.6	9.6
112	9.7		9.7
116		10.0	10.0
120		10.2	10.2
124		10.5	10.5
128	10.7		10.7
132		10.9	10.9
136		11.1	11.1
140		11.2	11.2
144	11.4		11.4
148		11.8	11.8
152		12.2	12.2

156		12.6	12.6
160	13		13.0
164		13.3	13.3
168		13.6	13.6
172		13.8	13.8
176	14.1		14.1
180		14.9	14.9
184		15.7	15.7
188		16.5	16.5
192	17.3		17.3
196		17.9	17.9
200		18.5	18.5
204		19.1	19.1
208	19.7		19.7
212		22.0	22.0
216		24.3	24.3
220		26.6	26.6
224	28.9		28.9
228		30.5	30.5
232		32.2	32.2
236		33.8	33.8
240	35.4		35.4
244		64.4	64.4
248		93.3	93.3
252		122.3	122.3
256	151.22		151.2
260		119.2	119.2
264		87.2	87.2
268		55.2	55.2
272	23.2		23.2
276		21.3	21.3
280		19.4	19.4
284		17.4	17.4
288	15.5		15.5
292		14.7	14.7
296		13.8	13.8
300		13.0	13.0
304	12.1		12.1
308		11.6	11.6
312		11.2	11.2
316		10.7	10.7
320	10.2		10.2
324		9.9	9.9
328		9.5	9.5
332		9.2	9.2
336	8.8		8.8
340		8.6	8.6
344		8.4	8.4

348		8.1	8.1
352	7.9		7.9
356		7.7	7.7
360		7.6	7.6
364		7.4	7.4
368	7.2		7.2
372		5.4	5.4
376		3.6	3.6
380		1.8	1.8
384	0		0.0

Detention 25 Canyon Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a project tree with the following structure:

- Detention 25C Pr
 - Basin Models
 - Basin 25C
 - Basin Inflow (highlighted)
 - Discharge Gage
 - Detention Basin 25C
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Sierra
 - Control Specifications
 - Control 1
 - Time-Series Data
 - Discharge Gages
 - Node 2472 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:24
 - Paired Data
 - Elevation-Storage Functions
 - Basin 25C Stage-Storage

Below the tree are three tabs: Components, Compute, and Results. The Components tab is active.

The bottom section shows the configuration for the selected 'Basin Inflow' element. It includes tabs for Source, Inflow, and Options. The Inflow tab is active, displaying the following configuration:

Basin Name: Basin 25C
Element Name: Basin Inflow

Description:	Node 2472	
Downstream:	Detention Basin 25C	
Area (MI2)	0.128	
Flow Method:	Discharge Gage	

Detention 25C Pr

Basin Models

Basin 25C

Basin Inflow

Detention Basin 25C

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 2472 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:24

Paired Data

Elevation-Storage Functions

Basin 25C Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 25C

Element Name: Detention Basin 25C

Method: Orifice Outlet

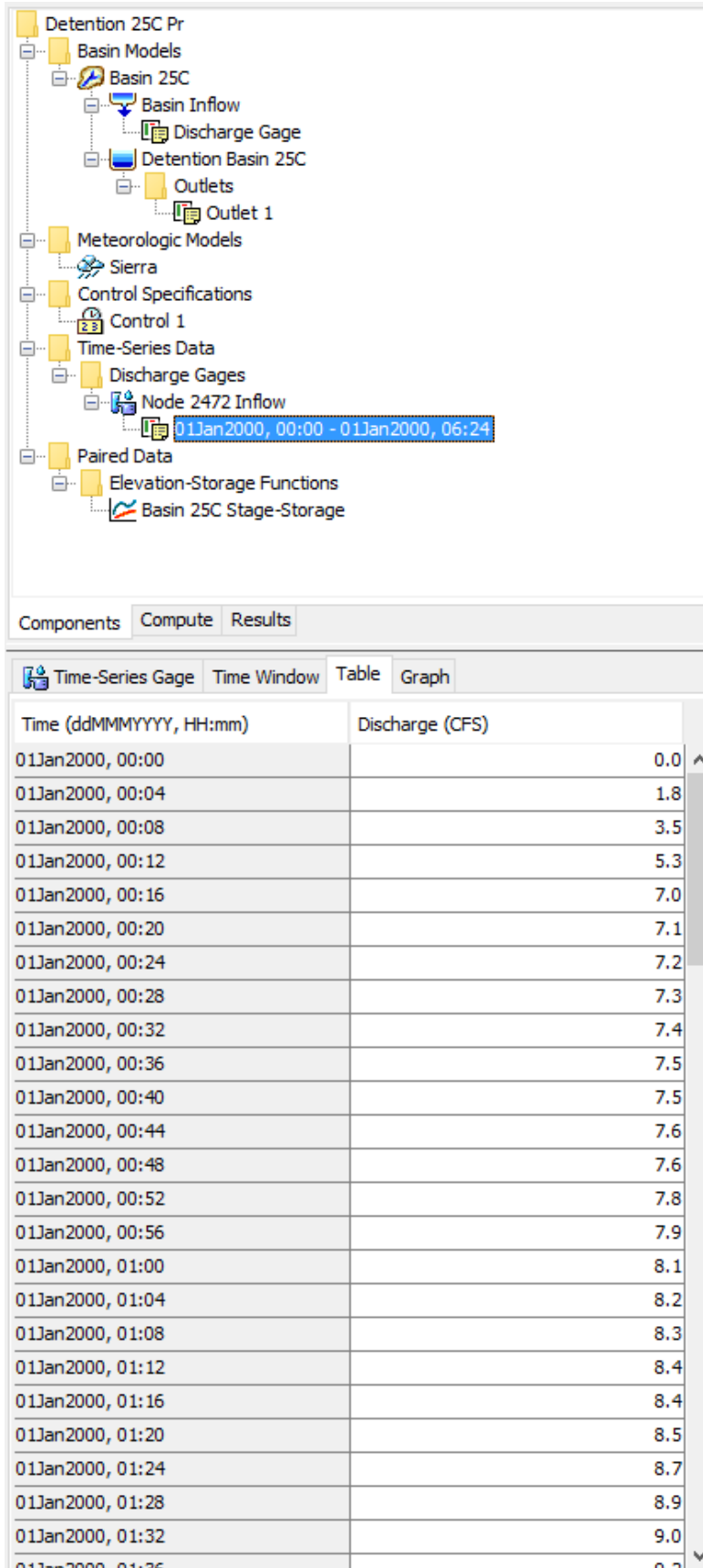
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.25

*Area (FT2) 3

*Coefficient: 0.60



Detention 25C Pr

Basin Models

Basin 25C

Basin Inflow

Discharge Gage

Detention Basin 25C

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2472 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:24

Paired Data

Elevation-Storage Functions

Basin 25C Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
3.0	7.638
3.9	10.072

Project: Detention 25C Pr Simulation Run: Run 1
Reservoir: Detention Basin 25C

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 25C
End of Run:	01Jan2000, 06:24	Meteorologic Model:	Sierra
Compute Time:	16Feb2017, 10:14:28	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	151.2 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:16
Peak Discharge:	20.1 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:38
Inflow Volume:	9.8 (AC-FT)	Peak Storage:	5.9 (AC-FT)
Discharge Volume:	5.3 (AC-FT)	Peak Elevation:	2.2 (FT)

Project: Detention 25C Pr Simulation Run: Run 1
Reservoir: Detention Basin 25C

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 25C
End of Run: 01Jan2000, 06:24 Meteorologic Model: Sierra
Compute Time: 16Feb2017, 10:14:28 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.4	0.0	0.0	0.0
01Jan2000	00:02	0.9	0.0	0.0	0.0
01Jan2000	00:03	1.4	0.0	0.0	0.0
01Jan2000	00:04	1.8	0.0	0.0	0.0
01Jan2000	00:05	2.2	0.0	0.0	0.0
01Jan2000	00:06	2.6	0.0	0.0	0.0
01Jan2000	00:07	3.1	0.0	0.0	0.0
01Jan2000	00:08	3.5	0.0	0.0	0.0
01Jan2000	00:09	4.0	0.0	0.0	0.0
01Jan2000	00:10	4.4	0.0	0.0	0.0
01Jan2000	00:11	4.8	0.0	0.0	0.0
01Jan2000	00:12	5.3	0.0	0.0	0.0
01Jan2000	00:13	5.7	0.1	0.0	0.0
01Jan2000	00:14	6.2	0.1	0.0	0.0
01Jan2000	00:15	6.6	0.1	0.0	0.0
01Jan2000	00:16	7.0	0.1	0.0	0.0
01Jan2000	00:17	7.0	0.1	0.0	0.0
01Jan2000	00:18	7.1	0.1	0.0	0.0
01Jan2000	00:19	7.1	0.1	0.0	0.0
01Jan2000	00:20	7.1	0.1	0.0	0.0
01Jan2000	00:21	7.1	0.1	0.0	0.0
01Jan2000	00:22	7.2	0.1	0.1	0.0
01Jan2000	00:23	7.2	0.1	0.1	0.0
01Jan2000	00:24	7.2	0.2	0.1	0.0
01Jan2000	00:25	7.2	0.2	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	7.2	0.2	0.1	0.0
01Jan2000	00:27	7.3	0.2	0.1	0.0
01Jan2000	00:28	7.3	0.2	0.1	0.0
01Jan2000	00:29	7.3	0.2	0.1	0.0
01Jan2000	00:30	7.4	0.2	0.1	0.0
01Jan2000	00:31	7.4	0.2	0.1	0.0
01Jan2000	00:32	7.4	0.2	0.1	0.0
01Jan2000	00:33	7.4	0.2	0.1	0.0
01Jan2000	00:34	7.4	0.3	0.1	0.0
01Jan2000	00:35	7.5	0.3	0.1	0.0
01Jan2000	00:36	7.5	0.3	0.1	0.0
01Jan2000	00:37	7.5	0.3	0.1	0.0
01Jan2000	00:38	7.5	0.3	0.1	0.0
01Jan2000	00:39	7.5	0.3	0.1	0.0
01Jan2000	00:40	7.5	0.3	0.1	0.0
01Jan2000	00:41	7.5	0.3	0.1	0.0
01Jan2000	00:42	7.6	0.3	0.1	0.0
01Jan2000	00:43	7.6	0.3	0.1	0.0
01Jan2000	00:44	7.6	0.4	0.1	0.0
01Jan2000	00:45	7.6	0.4	0.1	0.0
01Jan2000	00:46	7.6	0.4	0.1	0.0
01Jan2000	00:47	7.6	0.4	0.1	0.0
01Jan2000	00:48	7.6	0.4	0.2	0.0
01Jan2000	00:49	7.6	0.4	0.2	0.0
01Jan2000	00:50	7.7	0.4	0.2	0.0
01Jan2000	00:51	7.8	0.4	0.2	0.0
01Jan2000	00:52	7.8	0.4	0.2	0.0
01Jan2000	00:53	7.8	0.5	0.2	0.0
01Jan2000	00:54	7.8	0.5	0.2	0.0
01Jan2000	00:55	7.9	0.5	0.2	0.0
01Jan2000	00:56	7.9	0.5	0.2	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	8.0	0.5	0.2	0.0
01Jan2000	00:58	8.0	0.5	0.2	0.0
01Jan2000	00:59	8.0	0.5	0.2	0.0
01Jan2000	01:00	8.1	0.5	0.2	0.0
01Jan2000	01:01	8.1	0.5	0.2	0.0
01Jan2000	01:02	8.1	0.6	0.2	0.0
01Jan2000	01:03	8.2	0.6	0.2	0.0
01Jan2000	01:04	8.2	0.6	0.2	0.0
01Jan2000	01:05	8.2	0.6	0.2	0.0
01Jan2000	01:06	8.2	0.6	0.2	0.0
01Jan2000	01:07	8.3	0.6	0.2	0.0
01Jan2000	01:08	8.3	0.6	0.2	0.0
01Jan2000	01:09	8.3	0.6	0.2	0.0
01Jan2000	01:10	8.4	0.6	0.2	0.0
01Jan2000	01:11	8.4	0.7	0.2	0.0
01Jan2000	01:12	8.4	0.7	0.3	0.3
01Jan2000	01:13	8.4	0.7	0.3	1.0
01Jan2000	01:14	8.4	0.7	0.3	1.3
01Jan2000	01:15	8.4	0.7	0.3	1.6
01Jan2000	01:16	8.4	0.7	0.3	1.8
01Jan2000	01:17	8.4	0.7	0.3	2.0
01Jan2000	01:18	8.4	0.7	0.3	2.1
01Jan2000	01:19	8.5	0.7	0.3	2.3
01Jan2000	01:20	8.5	0.7	0.3	2.4
01Jan2000	01:21	8.6	0.8	0.3	2.6
01Jan2000	01:22	8.6	0.8	0.3	2.7
01Jan2000	01:23	8.6	0.8	0.3	2.8
01Jan2000	01:24	8.7	0.8	0.3	2.9
01Jan2000	01:25	8.8	0.8	0.3	3.0
01Jan2000	01:26	8.8	0.8	0.3	3.1
01Jan2000	01:27	8.8	0.8	0.3	3.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	8.9	0.8	0.3	3.3
01Jan2000	01:29	8.9	0.8	0.3	3.4
01Jan2000	01:30	9.0	0.8	0.3	3.5
01Jan2000	01:31	9.0	0.8	0.3	3.6
01Jan2000	01:32	9.0	0.8	0.3	3.6
01Jan2000	01:33	9.0	0.8	0.3	3.7
01Jan2000	01:34	9.1	0.9	0.3	3.8
01Jan2000	01:35	9.1	0.9	0.3	3.9
01Jan2000	01:36	9.2	0.9	0.3	3.9
01Jan2000	01:37	9.2	0.9	0.3	4.0
01Jan2000	01:38	9.2	0.9	0.3	4.1
01Jan2000	01:39	9.3	0.9	0.3	4.2
01Jan2000	01:40	9.3	0.9	0.3	4.2
01Jan2000	01:41	9.4	0.9	0.3	4.3
01Jan2000	01:42	9.4	0.9	0.3	4.3
01Jan2000	01:43	9.4	0.9	0.3	4.4
01Jan2000	01:44	9.5	0.9	0.3	4.5
01Jan2000	01:45	9.5	0.9	0.3	4.5
01Jan2000	01:46	9.6	0.9	0.4	4.6
01Jan2000	01:47	9.6	0.9	0.4	4.6
01Jan2000	01:48	9.6	0.9	0.4	4.7
01Jan2000	01:49	9.6	1.0	0.4	4.8
01Jan2000	01:50	9.6	1.0	0.4	4.8
01Jan2000	01:51	9.7	1.0	0.4	4.9
01Jan2000	01:52	9.7	1.0	0.4	4.9
01Jan2000	01:53	9.8	1.0	0.4	5.0
01Jan2000	01:54	9.8	1.0	0.4	5.0
01Jan2000	01:55	9.9	1.0	0.4	5.1
01Jan2000	01:56	10.0	1.0	0.4	5.1
01Jan2000	01:57	10.0	1.0	0.4	5.2
01Jan2000	01:58	10.1	1.0	0.4	5.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	10.1	1.0	0.4	5.3
01Jan2000	02:00	10.2	1.0	0.4	5.3
01Jan2000	02:01	10.3	1.0	0.4	5.4
01Jan2000	02:02	10.4	1.0	0.4	5.4
01Jan2000	02:03	10.4	1.0	0.4	5.5
01Jan2000	02:04	10.5	1.1	0.4	5.5
01Jan2000	02:05	10.6	1.1	0.4	5.6
01Jan2000	02:06	10.6	1.1	0.4	5.6
01Jan2000	02:07	10.6	1.1	0.4	5.7
01Jan2000	02:08	10.7	1.1	0.4	5.7
01Jan2000	02:09	10.8	1.1	0.4	5.8
01Jan2000	02:10	10.8	1.1	0.4	5.8
01Jan2000	02:11	10.8	1.1	0.4	5.9
01Jan2000	02:12	10.9	1.1	0.4	5.9
01Jan2000	02:13	11.0	1.1	0.4	5.9
01Jan2000	02:14	11.0	1.1	0.4	6.0
01Jan2000	02:15	11.0	1.1	0.4	6.0
01Jan2000	02:16	11.1	1.1	0.4	6.1
01Jan2000	02:17	11.1	1.1	0.4	6.1
01Jan2000	02:18	11.1	1.2	0.4	6.2
01Jan2000	02:19	11.2	1.2	0.4	6.2
01Jan2000	02:20	11.2	1.2	0.4	6.3
01Jan2000	02:21	11.2	1.2	0.4	6.3
01Jan2000	02:22	11.3	1.2	0.4	6.3
01Jan2000	02:23	11.4	1.2	0.4	6.4
01Jan2000	02:24	11.4	1.2	0.4	6.4
01Jan2000	02:25	11.5	1.2	0.5	6.5
01Jan2000	02:26	11.6	1.2	0.5	6.5
01Jan2000	02:27	11.7	1.2	0.5	6.5
01Jan2000	02:28	11.8	1.2	0.5	6.6
01Jan2000	02:29	11.9	1.2	0.5	6.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	12.0	1.2	0.5	6.7
01Jan2000	02:31	12.1	1.2	0.5	6.7
01Jan2000	02:32	12.2	1.3	0.5	6.8
01Jan2000	02:33	12.3	1.3	0.5	6.8
01Jan2000	02:34	12.4	1.3	0.5	6.8
01Jan2000	02:35	12.5	1.3	0.5	6.9
01Jan2000	02:36	12.6	1.3	0.5	6.9
01Jan2000	02:37	12.7	1.3	0.5	7.0
01Jan2000	02:38	12.8	1.3	0.5	7.0
01Jan2000	02:39	12.9	1.3	0.5	7.1
01Jan2000	02:40	13.0	1.3	0.5	7.1
01Jan2000	02:41	13.1	1.3	0.5	7.2
01Jan2000	02:42	13.2	1.3	0.5	7.2
01Jan2000	02:43	13.2	1.3	0.5	7.2
01Jan2000	02:44	13.3	1.3	0.5	7.3
01Jan2000	02:45	13.4	1.4	0.5	7.3
01Jan2000	02:46	13.4	1.4	0.5	7.4
01Jan2000	02:47	13.5	1.4	0.5	7.4
01Jan2000	02:48	13.6	1.4	0.5	7.5
01Jan2000	02:49	13.6	1.4	0.5	7.5
01Jan2000	02:50	13.7	1.4	0.5	7.6
01Jan2000	02:51	13.8	1.4	0.5	7.6
01Jan2000	02:52	13.8	1.4	0.5	7.6
01Jan2000	02:53	13.9	1.4	0.5	7.7
01Jan2000	02:54	14.0	1.4	0.5	7.7
01Jan2000	02:55	14.0	1.4	0.5	7.8
01Jan2000	02:56	14.1	1.4	0.5	7.8
01Jan2000	02:57	14.3	1.5	0.5	7.9
01Jan2000	02:58	14.5	1.5	0.5	7.9
01Jan2000	02:59	14.7	1.5	0.6	7.9
01Jan2000	03:00	14.9	1.5	0.6	8.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	15.1	1.5	0.6	8.0
01Jan2000	03:02	15.3	1.5	0.6	8.1
01Jan2000	03:03	15.5	1.5	0.6	8.1
01Jan2000	03:04	15.7	1.5	0.6	8.2
01Jan2000	03:05	15.9	1.5	0.6	8.2
01Jan2000	03:06	16.1	1.5	0.6	8.3
01Jan2000	03:07	16.3	1.6	0.6	8.3
01Jan2000	03:08	16.5	1.6	0.6	8.4
01Jan2000	03:09	16.7	1.6	0.6	8.4
01Jan2000	03:10	16.9	1.6	0.6	8.5
01Jan2000	03:11	17.1	1.6	0.6	8.5
01Jan2000	03:12	17.3	1.6	0.6	8.6
01Jan2000	03:13	17.4	1.6	0.6	8.7
01Jan2000	03:14	17.6	1.6	0.6	8.7
01Jan2000	03:15	17.8	1.7	0.6	8.8
01Jan2000	03:16	17.9	1.7	0.6	8.8
01Jan2000	03:17	18.0	1.7	0.6	8.9
01Jan2000	03:18	18.2	1.7	0.6	8.9
01Jan2000	03:19	18.4	1.7	0.6	9.0
01Jan2000	03:20	18.5	1.7	0.6	9.0
01Jan2000	03:21	18.6	1.7	0.6	9.1
01Jan2000	03:22	18.8	1.7	0.7	9.2
01Jan2000	03:23	19.0	1.8	0.7	9.2
01Jan2000	03:24	19.1	1.8	0.7	9.3
01Jan2000	03:25	19.2	1.8	0.7	9.3
01Jan2000	03:26	19.4	1.8	0.7	9.4
01Jan2000	03:27	19.6	1.8	0.7	9.4
01Jan2000	03:28	19.7	1.8	0.7	9.5
01Jan2000	03:29	20.3	1.8	0.7	9.6
01Jan2000	03:30	20.8	1.9	0.7	9.6
01Jan2000	03:31	21.4	1.9	0.7	9.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	22.0	1.9	0.7	9.8
01Jan2000	03:33	22.6	1.9	0.7	9.8
01Jan2000	03:34	23.2	1.9	0.7	9.9
01Jan2000	03:35	23.7	1.9	0.7	10.0
01Jan2000	03:36	24.3	2.0	0.7	10.0
01Jan2000	03:37	24.9	2.0	0.7	10.1
01Jan2000	03:38	25.5	2.0	0.7	10.2
01Jan2000	03:39	26.0	2.0	0.8	10.3
01Jan2000	03:40	26.6	2.0	0.8	10.4
01Jan2000	03:41	27.2	2.1	0.8	10.4
01Jan2000	03:42	27.8	2.1	0.8	10.5
01Jan2000	03:43	28.3	2.1	0.8	10.6
01Jan2000	03:44	28.9	2.1	0.8	10.7
01Jan2000	03:45	29.3	2.2	0.8	10.8
01Jan2000	03:46	29.7	2.2	0.8	10.9
01Jan2000	03:47	30.1	2.2	0.8	11.0
01Jan2000	03:48	30.5	2.2	0.8	11.1
01Jan2000	03:49	30.9	2.3	0.8	11.2
01Jan2000	03:50	31.4	2.3	0.9	11.3
01Jan2000	03:51	31.8	2.3	0.9	11.4
01Jan2000	03:52	32.2	2.3	0.9	11.5
01Jan2000	03:53	32.6	2.4	0.9	11.6
01Jan2000	03:54	33.0	2.4	0.9	11.7
01Jan2000	03:55	33.4	2.4	0.9	11.8
01Jan2000	03:56	33.8	2.5	0.9	11.9
01Jan2000	03:57	34.2	2.5	0.9	12.0
01Jan2000	03:58	34.6	2.5	0.9	12.1
01Jan2000	03:59	35.0	2.6	1.0	12.2
01Jan2000	04:00	35.4	2.6	1.0	12.3
01Jan2000	04:01	42.6	2.6	1.0	12.4
01Jan2000	04:02	49.9	2.7	1.0	12.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	57.2	2.7	1.0	12.7
01Jan2000	04:04	64.4	2.8	1.0	12.9
01Jan2000	04:05	71.6	2.9	1.1	13.1
01Jan2000	04:06	78.8	3.0	1.1	13.4
01Jan2000	04:07	86.1	3.1	1.1	13.7
01Jan2000	04:08	93.3	3.2	1.2	14.0
01Jan2000	04:09	100.6	3.3	1.2	14.3
01Jan2000	04:10	107.8	3.4	1.3	14.6
01Jan2000	04:11	115.0	3.5	1.3	15.0
01Jan2000	04:12	122.3	3.7	1.4	15.3
01Jan2000	04:13	129.5	3.8	1.4	15.7
01Jan2000	04:14	136.8	4.0	1.5	16.1
01Jan2000	04:15	144.0	4.2	1.6	16.5
01Jan2000	04:16	151.2	4.3	1.6	16.9
01Jan2000	04:17	143.2	4.5	1.7	17.3
01Jan2000	04:18	135.2	4.7	1.8	17.7
01Jan2000	04:19	127.2	4.8	1.8	18.1
01Jan2000	04:20	119.2	5.0	1.9	18.4
01Jan2000	04:21	111.2	5.1	1.9	18.7
01Jan2000	04:22	103.2	5.2	2.0	18.9
01Jan2000	04:23	95.2	5.3	2.0	19.1
01Jan2000	04:24	87.2	5.4	2.0	19.3
01Jan2000	04:25	79.2	5.5	2.1	19.5
01Jan2000	04:26	71.2	5.6	2.1	19.7
01Jan2000	04:27	63.2	5.7	2.1	19.8
01Jan2000	04:28	55.2	5.7	2.1	19.9
01Jan2000	04:29	47.2	5.8	2.2	20.0
01Jan2000	04:30	39.2	5.8	2.2	20.0
01Jan2000	04:31	31.2	5.8	2.2	20.1
01Jan2000	04:32	23.2	5.8	2.2	20.1
01Jan2000	04:33	22.7	5.8	2.2	20.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	22.2	5.8	2.2	20.1
01Jan2000	04:35	21.8	5.8	2.2	20.1
01Jan2000	04:36	21.3	5.8	2.2	20.1
01Jan2000	04:37	20.8	5.9	2.2	20.1
01Jan2000	04:38	20.4	5.9	2.2	20.1
01Jan2000	04:39	19.9	5.9	2.2	20.1
01Jan2000	04:40	19.4	5.9	2.2	20.1
01Jan2000	04:41	18.9	5.8	2.2	20.1
01Jan2000	04:42	18.4	5.8	2.2	20.1
01Jan2000	04:43	17.9	5.8	2.2	20.1
01Jan2000	04:44	17.4	5.8	2.2	20.1
01Jan2000	04:45	16.9	5.8	2.2	20.1
01Jan2000	04:46	16.4	5.8	2.2	20.1
01Jan2000	04:47	16.0	5.8	2.2	20.1
01Jan2000	04:48	15.5	5.8	2.2	20.1
01Jan2000	04:49	15.3	5.8	2.2	20.1
01Jan2000	04:50	15.1	5.8	2.2	20.0
01Jan2000	04:51	14.9	5.8	2.2	20.0
01Jan2000	04:52	14.7	5.8	2.2	20.0
01Jan2000	04:53	14.5	5.8	2.2	20.0
01Jan2000	04:54	14.2	5.8	2.2	20.0
01Jan2000	04:55	14.0	5.8	2.2	20.0
01Jan2000	04:56	13.8	5.8	2.2	20.0
01Jan2000	04:57	13.6	5.8	2.2	19.9
01Jan2000	04:58	13.4	5.7	2.2	19.9
01Jan2000	04:59	13.2	5.7	2.2	19.9
01Jan2000	05:00	13.0	5.7	2.1	19.9
01Jan2000	05:01	12.8	5.7	2.1	19.9
01Jan2000	05:02	12.6	5.7	2.1	19.8
01Jan2000	05:03	12.3	5.7	2.1	19.8
01Jan2000	05:04	12.1	5.7	2.1	19.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	12.0	5.7	2.1	19.8
01Jan2000	05:06	11.8	5.7	2.1	19.8
01Jan2000	05:07	11.7	5.7	2.1	19.7
01Jan2000	05:08	11.6	5.6	2.1	19.7
01Jan2000	05:09	11.5	5.6	2.1	19.7
01Jan2000	05:10	11.4	5.6	2.1	19.7
01Jan2000	05:11	11.3	5.6	2.1	19.7
01Jan2000	05:12	11.2	5.6	2.1	19.6
01Jan2000	05:13	11.1	5.6	2.1	19.6
01Jan2000	05:14	11.0	5.6	2.1	19.6
01Jan2000	05:15	10.8	5.6	2.1	19.6
01Jan2000	05:16	10.7	5.5	2.1	19.5
01Jan2000	05:17	10.6	5.5	2.1	19.5
01Jan2000	05:18	10.4	5.5	2.1	19.5
01Jan2000	05:19	10.3	5.5	2.1	19.5
01Jan2000	05:20	10.2	5.5	2.1	19.4
01Jan2000	05:21	10.1	5.5	2.1	19.4
01Jan2000	05:22	10.0	5.5	2.1	19.4
01Jan2000	05:23	10.0	5.5	2.0	19.4
01Jan2000	05:24	9.9	5.4	2.0	19.3
01Jan2000	05:25	9.8	5.4	2.0	19.3
01Jan2000	05:26	9.7	5.4	2.0	19.3
01Jan2000	05:27	9.6	5.4	2.0	19.3
01Jan2000	05:28	9.5	5.4	2.0	19.2
01Jan2000	05:29	9.4	5.4	2.0	19.2
01Jan2000	05:30	9.4	5.4	2.0	19.2
01Jan2000	05:31	9.3	5.4	2.0	19.1
01Jan2000	05:32	9.2	5.3	2.0	19.1
01Jan2000	05:33	9.1	5.3	2.0	19.1
01Jan2000	05:34	9.0	5.3	2.0	19.1
01Jan2000	05:35	8.9	5.3	2.0	19.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	8.8	5.3	2.0	19.0
01Jan2000	05:37	8.8	5.3	2.0	19.0
01Jan2000	05:38	8.7	5.3	2.0	18.9
01Jan2000	05:39	8.6	5.2	2.0	18.9
01Jan2000	05:40	8.6	5.2	2.0	18.9
01Jan2000	05:41	8.6	5.2	2.0	18.9
01Jan2000	05:42	8.5	5.2	2.0	18.8
01Jan2000	05:43	8.4	5.2	1.9	18.8
01Jan2000	05:44	8.4	5.2	1.9	18.8
01Jan2000	05:45	8.3	5.2	1.9	18.7
01Jan2000	05:46	8.2	5.1	1.9	18.7
01Jan2000	05:47	8.2	5.1	1.9	18.7
01Jan2000	05:48	8.1	5.1	1.9	18.6
01Jan2000	05:49	8.0	5.1	1.9	18.6
01Jan2000	05:50	8.0	5.1	1.9	18.6
01Jan2000	05:51	8.0	5.1	1.9	18.6
01Jan2000	05:52	7.9	5.1	1.9	18.5
01Jan2000	05:53	7.9	5.0	1.9	18.5
01Jan2000	05:54	7.8	5.0	1.9	18.5
01Jan2000	05:55	7.8	5.0	1.9	18.4
01Jan2000	05:56	7.7	5.0	1.9	18.4
01Jan2000	05:57	7.7	5.0	1.9	18.4
01Jan2000	05:58	7.6	5.0	1.9	18.3
01Jan2000	05:59	7.6	5.0	1.9	18.3
01Jan2000	06:00	7.6	4.9	1.9	18.3
01Jan2000	06:01	7.6	4.9	1.8	18.2
01Jan2000	06:02	7.5	4.9	1.8	18.2
01Jan2000	06:03	7.4	4.9	1.8	18.2
01Jan2000	06:04	7.4	4.9	1.8	18.1
01Jan2000	06:05	7.4	4.9	1.8	18.1
01Jan2000	06:06	7.3	4.9	1.8	18.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	06:07	7.2	4.8	1.8	18.1
01Jan2000	06:08	7.2	4.8	1.8	18.0
01Jan2000	06:09	6.8	4.8	1.8	18.0
01Jan2000	06:10	6.3	4.8	1.8	18.0
01Jan2000	06:11	5.9	4.8	1.8	17.9
01Jan2000	06:12	5.4	4.8	1.8	17.9
01Jan2000	06:13	5.0	4.7	1.8	17.8
01Jan2000	06:14	4.5	4.7	1.8	17.8
01Jan2000	06:15	4.1	4.7	1.8	17.8
01Jan2000	06:16	3.6	4.7	1.8	17.7
01Jan2000	06:17	3.2	4.7	1.7	17.7
01Jan2000	06:18	2.7	4.6	1.7	17.6
01Jan2000	06:19	2.2	4.6	1.7	17.6
01Jan2000	06:20	1.8	4.6	1.7	17.5
01Jan2000	06:21	1.4	4.6	1.7	17.5
01Jan2000	06:22	0.9	4.6	1.7	17.4
01Jan2000	06:23	0.4	4.5	1.7	17.4
01Jan2000	06:24	0.0	4.5	1.7	17.3

East Valley Detention - Node 2414.7

Node to Node		Code	C Factor	Area (ac.)	C x A
2415.9	2415.8	2	0.57	0.10	0.06
2415.8	2415.7	6	0.57	2.43	1.39
2415.5	2415.4	2	0.57	0.07	0.04
2415.4	2415.3	6	0.57	1.93	1.10
2415.1	2414.9	2	0.57	0.12	0.07
2414.9	2415.2	6	0.57	3.27	1.86
2414.8	2414.7	5	0.57	8.65	4.93
			Total	16.57	9.44
			Avg C	0.57	

EAST VALLEY DETENTION – NODE 2414.7

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 2/15/2017

HYDROGRAPH FILE NAME Text1

TIME OF CONCENTRATION 10 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 16.6 ACRES

RUNOFF COEFFICIENT 0.57

PEAK DISCHARGE 54.16 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 10 DISCHARGE (CFS) = 2

TIME (MIN) = 20 DISCHARGE (CFS) = 2

TIME (MIN) = 30 DISCHARGE (CFS) = 2.1

TIME (MIN) = 40 DISCHARGE (CFS) = 2.1

TIME (MIN) = 50 DISCHARGE (CFS) = 2.2

TIME (MIN) = 60 DISCHARGE (CFS) = 2.3

TIME (MIN) = 70 DISCHARGE (CFS) = 2.4

TIME (MIN) = 80 DISCHARGE (CFS) = 2.5

TIME (MIN) = 90 DISCHARGE (CFS) = 2.6

TIME (MIN) = 100 DISCHARGE (CFS) = 2.7

TIME (MIN) = 110 DISCHARGE (CFS) = 2.8

TIME (MIN) = 120 DISCHARGE (CFS) = 2.9

TIME (MIN) = 130 DISCHARGE (CFS) = 3.1

TIME (MIN) = 140 DISCHARGE (CFS) = 3.2

TIME (MIN) = 150 DISCHARGE (CFS) = 3.5

TIME (MIN) = 160 DISCHARGE (CFS) = 3.7
TIME (MIN) = 170 DISCHARGE (CFS) = 4.1
TIME (MIN) = 180 DISCHARGE (CFS) = 4.3
TIME (MIN) = 190 DISCHARGE (CFS) = 5
TIME (MIN) = 200 DISCHARGE (CFS) = 5.4
TIME (MIN) = 210 DISCHARGE (CFS) = 6.6
TIME (MIN) = 220 DISCHARGE (CFS) = 7.5
TIME (MIN) = 230 DISCHARGE (CFS) = 11
TIME (MIN) = 240 DISCHARGE (CFS) = 17.2
TIME (MIN) = 250 DISCHARGE (CFS) = 54.16
TIME (MIN) = 260 DISCHARGE (CFS) = 8.9
TIME (MIN) = 270 DISCHARGE (CFS) = 5.9
TIME (MIN) = 280 DISCHARGE (CFS) = 4.6
TIME (MIN) = 290 DISCHARGE (CFS) = 3.9
TIME (MIN) = 300 DISCHARGE (CFS) = 3.4
TIME (MIN) = 310 DISCHARGE (CFS) = 3
TIME (MIN) = 320 DISCHARGE (CFS) = 2.7
TIME (MIN) = 330 DISCHARGE (CFS) = 2.5
TIME (MIN) = 340 DISCHARGE (CFS) = 2.3
TIME (MIN) = 350 DISCHARGE (CFS) = 2.2
TIME (MIN) = 360 DISCHARGE (CFS) = 2.1
TIME (MIN) = 370 DISCHARGE (CFS) = 0

Detention 25 East Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a project tree for 'Detention 25E Pr'. The tree structure is as follows:

- Detention 25E Pr
 - Basin Models
 - Basin 25E
 - Basin Inflow (highlighted)
 - Discharge Gage
 - Detention Basin 25E
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Time-Series Data
 - Discharge Gages
 - Node 2414.7 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
 - Paired Data
 - Elevation-Storage Functions
 - Basin 25E Stage-Storage

Below the tree are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active.

The bottom section shows the configuration for the selected 'Basin Inflow' element. It has three tabs: 'Source', 'Inflow', and 'Options'. The 'Source' tab is active.

Basin Name: Basin 25E
Element Name: Basin Inflow

Description:	Node 2414.7	
Downstream:	Detention Basin 25E	
Area (MI2)	0.026	
Flow Method:	Discharge Gage	

Detention 25E Pr

Basin Models

Basin 25E

Basin Inflow

Discharge Gage

Detention Basin 25E

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 2414.7 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:10

Paired Data

Elevation-Storage Functions

Basin 25E Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 25E

Element Name: Detention Basin 25E

Method: Orifice Outlet

Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.125

*Area (FT2) 0.325

*Coefficient: 0.60

Detention 25E Pr	
Basin Models	
Basin 25E	
Basin Inflow	
Discharge Gage	
Detention Basin 25E	
Outlets	
Outlet 1	
Meteorologic Models	
Control Specifications	
Time-Series Data	
Discharge Gages	
Node 2414.7 Inflow	
01Jan2000, 00:00 - 01Jan2000, 06:10	
Paired Data	
Elevation-Storage Functions	
Basin 25E Stage-Storage	

Components	Compute	Results

Time-Series Gage	Time Window	Table	Graph

Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.00
01Jan2000, 00:10	2.00
01Jan2000, 00:20	2.00
01Jan2000, 00:30	2.10
01Jan2000, 00:40	2.10
01Jan2000, 00:50	2.20
01Jan2000, 01:00	2.30
01Jan2000, 01:10	2.40
01Jan2000, 01:20	2.50
01Jan2000, 01:30	2.60
01Jan2000, 01:40	2.70
01Jan2000, 01:50	2.80
01Jan2000, 02:00	2.90
01Jan2000, 02:10	3.10
01Jan2000, 02:20	3.20
01Jan2000, 02:30	3.50
01Jan2000, 02:40	3.70
01Jan2000, 02:50	4.10
01Jan2000, 03:00	4.30
01Jan2000, 03:10	5.00
01Jan2000, 03:20	5.40
01Jan2000, 03:30	6.60
01Jan2000, 03:40	7.50
01Jan2000, 03:50	11.00
01Jan2000, 04:00	17.20
01Jan2000, 04:10	54.16
01Jan2000, 04:20	8.90

Detention 25E Pr

- Basin Models
 - Basin 25E
 - Basin Inflow
 - Discharge Gage
 - Detention Basin 25E
 - Outlets
 - Outlet 1
- Meteorologic Models
- Control Specifications
- Time-Series Data
 - Discharge Gages
 - Node 2414.7 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
- Paired Data
 - Elevation-Storage Functions
 - Basin 25E Stage-Storage

Components Compute Results

Paired Data Table Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
3.0	0.777
8.0	2.584

Project: Detention 25E Pr Simulation Run: Run 1
Reservoir: Detention Basin 25E

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 25E
End of Run:	01Jan2000, 06:10	Meteorologic Model:	Sierra
Compute Time:	17Jan2017, 11:50:38	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	54.2 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:10
Peak Discharge:	3.7 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:54
Inflow Volume:	2.7 (AC-FT)	Peak Storage:	1.8 (AC-FT)
Discharge Volume:	1.1 (AC-FT)	Peak Elevation:	5.7 (FT)

Observed Hydrograph at Gage Node 2414.7 Inflow

Peak Discharge:	54.2 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:10
Mean Abs Error:	3.7 (CFS)	RMS Error:	8.2 (CFS)
Volume:	2.7 (AC-FT)	Volume Residual:	-1.6 (AC-FT)
Nash-Sutcliffe:	-0.115		

Project: Detention 25E Pr Simulation Run: Run 1
 Reservoir: Detention Basin 25E

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 25E
 End of Run: 01Jan2000, 06:10 Meteorologic Model: Sierra
 Compute Time: 17Jan2017, 11:50:38 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:02	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:03	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:04	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:05	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:06	1.2	0.0	0.0	0.0	1.2
01Jan2000	00:07	1.4	0.0	0.0	0.0	1.4
01Jan2000	00:08	1.6	0.0	0.0	0.0	1.6
01Jan2000	00:09	1.8	0.0	0.0	0.0	1.8
01Jan2000	00:10	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:11	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:12	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:13	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:14	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:15	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:16	2.0	0.0	0.1	0.0	2.0
01Jan2000	00:17	2.0	0.0	0.1	0.1	2.0
01Jan2000	00:18	2.0	0.0	0.1	0.2	2.0
01Jan2000	00:19	2.0	0.0	0.1	0.2	2.0
01Jan2000	00:20	2.0	0.0	0.2	0.3	2.0
01Jan2000	00:21	2.0	0.0	0.2	0.3	2.0
01Jan2000	00:22	2.0	0.0	0.2	0.3	2.0
01Jan2000	00:23	2.0	0.0	0.2	0.4	2.0
01Jan2000	00:24	2.0	0.0	0.2	0.4	2.0
01Jan2000	00:25	2.0	0.1	0.2	0.4	2.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	2.1	0.1	0.2	0.5	2.1
01Jan2000	00:27	2.1	0.1	0.2	0.5	2.1
01Jan2000	00:28	2.1	0.1	0.2	0.5	2.1
01Jan2000	00:29	2.1	0.1	0.2	0.5	2.1
01Jan2000	00:30	2.1	0.1	0.2	0.5	2.1
01Jan2000	00:31	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:32	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:33	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:34	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:35	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:36	2.1	0.1	0.3	0.6	2.1
01Jan2000	00:37	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:38	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:39	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:40	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:41	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:42	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:43	2.1	0.1	0.3	0.7	2.1
01Jan2000	00:44	2.1	0.1	0.4	0.7	2.1
01Jan2000	00:45	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:46	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:47	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:48	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:49	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:50	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:51	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:52	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:53	2.2	0.1	0.4	0.8	2.2
01Jan2000	00:54	2.2	0.1	0.4	0.9	2.2
01Jan2000	00:55	2.2	0.1	0.4	0.9	2.2
01Jan2000	00:56	2.3	0.1	0.4	0.9	2.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	2.3	0.1	0.4	0.9	2.3
01Jan2000	00:58	2.3	0.1	0.5	0.9	2.3
01Jan2000	00:59	2.3	0.1	0.5	0.9	2.3
01Jan2000	01:00	2.3	0.1	0.5	0.9	2.3
01Jan2000	01:01	2.3	0.1	0.5	0.9	2.3
01Jan2000	01:02	2.3	0.1	0.5	0.9	2.3
01Jan2000	01:03	2.3	0.1	0.5	0.9	2.3
01Jan2000	01:04	2.3	0.1	0.5	1.0	2.3
01Jan2000	01:05	2.3	0.1	0.5	1.0	2.3
01Jan2000	01:06	2.4	0.1	0.5	1.0	2.4
01Jan2000	01:07	2.4	0.1	0.5	1.0	2.4
01Jan2000	01:08	2.4	0.1	0.5	1.0	2.4
01Jan2000	01:09	2.4	0.1	0.5	1.0	2.4
01Jan2000	01:10	2.4	0.1	0.5	1.0	2.4
01Jan2000	01:11	2.4	0.1	0.6	1.0	2.4
01Jan2000	01:12	2.4	0.1	0.6	1.0	2.4
01Jan2000	01:13	2.4	0.1	0.6	1.0	2.4
01Jan2000	01:14	2.4	0.1	0.6	1.0	2.4
01Jan2000	01:15	2.4	0.2	0.6	1.1	2.4
01Jan2000	01:16	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:17	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:18	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:19	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:20	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:21	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:22	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:23	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:24	2.5	0.2	0.6	1.1	2.5
01Jan2000	01:25	2.6	0.2	0.7	1.1	2.6
01Jan2000	01:26	2.6	0.2	0.7	1.1	2.6
01Jan2000	01:27	2.6	0.2	0.7	1.2	2.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:29	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:30	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:31	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:32	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:33	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:34	2.6	0.2	0.7	1.2	2.6
01Jan2000	01:35	2.7	0.2	0.7	1.2	2.7
01Jan2000	01:36	2.7	0.2	0.7	1.2	2.7
01Jan2000	01:37	2.7	0.2	0.7	1.2	2.7
01Jan2000	01:38	2.7	0.2	0.8	1.2	2.7
01Jan2000	01:39	2.7	0.2	0.8	1.2	2.7
01Jan2000	01:40	2.7	0.2	0.8	1.3	2.7
01Jan2000	01:41	2.7	0.2	0.8	1.3	2.7
01Jan2000	01:42	2.7	0.2	0.8	1.3	2.7
01Jan2000	01:43	2.7	0.2	0.8	1.3	2.7
01Jan2000	01:44	2.7	0.2	0.8	1.3	2.7
01Jan2000	01:45	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:46	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:47	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:48	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:49	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:50	2.8	0.2	0.8	1.3	2.8
01Jan2000	01:51	2.8	0.2	0.9	1.3	2.8
01Jan2000	01:52	2.8	0.2	0.9	1.3	2.8
01Jan2000	01:53	2.8	0.2	0.9	1.3	2.8
01Jan2000	01:54	2.8	0.2	0.9	1.4	2.8
01Jan2000	01:55	2.8	0.2	0.9	1.4	2.8
01Jan2000	01:56	2.9	0.2	0.9	1.4	2.9
01Jan2000	01:57	2.9	0.2	0.9	1.4	2.9
01Jan2000	01:58	2.9	0.2	0.9	1.4	2.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	2.9	0.2	0.9	1.4	2.9
01Jan2000	02:00	2.9	0.2	0.9	1.4	2.9
01Jan2000	02:01	2.9	0.2	0.9	1.4	2.9
01Jan2000	02:02	2.9	0.2	0.9	1.4	2.9
01Jan2000	02:03	3.0	0.2	0.9	1.4	3.0
01Jan2000	02:04	3.0	0.2	1.0	1.4	3.0
01Jan2000	02:05	3.0	0.3	1.0	1.4	3.0
01Jan2000	02:06	3.0	0.3	1.0	1.4	3.0
01Jan2000	02:07	3.0	0.3	1.0	1.4	3.0
01Jan2000	02:08	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:09	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:10	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:11	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:12	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:13	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:14	3.1	0.3	1.0	1.5	3.1
01Jan2000	02:15	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:16	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:17	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:18	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:19	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:20	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:21	3.2	0.3	1.1	1.5	3.2
01Jan2000	02:22	3.3	0.3	1.1	1.6	3.3
01Jan2000	02:23	3.3	0.3	1.1	1.6	3.3
01Jan2000	02:24	3.3	0.3	1.1	1.6	3.3
01Jan2000	02:25	3.4	0.3	1.1	1.6	3.4
01Jan2000	02:26	3.4	0.3	1.2	1.6	3.4
01Jan2000	02:27	3.4	0.3	1.2	1.6	3.4
01Jan2000	02:28	3.4	0.3	1.2	1.6	3.4
01Jan2000	02:29	3.5	0.3	1.2	1.6	3.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	3.5	0.3	1.2	1.6	3.5
01Jan2000	02:31	3.5	0.3	1.2	1.6	3.5
01Jan2000	02:32	3.5	0.3	1.2	1.6	3.5
01Jan2000	02:33	3.6	0.3	1.2	1.6	3.6
01Jan2000	02:34	3.6	0.3	1.2	1.6	3.6
01Jan2000	02:35	3.6	0.3	1.2	1.7	3.6
01Jan2000	02:36	3.6	0.3	1.3	1.7	3.6
01Jan2000	02:37	3.6	0.3	1.3	1.7	3.6
01Jan2000	02:38	3.7	0.3	1.3	1.7	3.7
01Jan2000	02:39	3.7	0.3	1.3	1.7	3.7
01Jan2000	02:40	3.7	0.3	1.3	1.7	3.7
01Jan2000	02:41	3.7	0.3	1.3	1.7	3.7
01Jan2000	02:42	3.8	0.3	1.3	1.7	3.8
01Jan2000	02:43	3.8	0.3	1.3	1.7	3.8
01Jan2000	02:44	3.9	0.3	1.3	1.7	3.9
01Jan2000	02:45	3.9	0.3	1.3	1.7	3.9
01Jan2000	02:46	3.9	0.4	1.4	1.7	3.9
01Jan2000	02:47	4.0	0.4	1.4	1.7	4.0
01Jan2000	02:48	4.0	0.4	1.4	1.8	4.0
01Jan2000	02:49	4.1	0.4	1.4	1.8	4.1
01Jan2000	02:50	4.1	0.4	1.4	1.8	4.1
01Jan2000	02:51	4.1	0.4	1.4	1.8	4.1
01Jan2000	02:52	4.1	0.4	1.4	1.8	4.1
01Jan2000	02:53	4.2	0.4	1.4	1.8	4.2
01Jan2000	02:54	4.2	0.4	1.5	1.8	4.2
01Jan2000	02:55	4.2	0.4	1.5	1.8	4.2
01Jan2000	02:56	4.2	0.4	1.5	1.8	4.2
01Jan2000	02:57	4.2	0.4	1.5	1.8	4.2
01Jan2000	02:58	4.3	0.4	1.5	1.8	4.3
01Jan2000	02:59	4.3	0.4	1.5	1.8	4.3
01Jan2000	03:00	4.3	0.4	1.5	1.9	4.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	4.4	0.4	1.5	1.9	4.4
01Jan2000	03:02	4.4	0.4	1.6	1.9	4.4
01Jan2000	03:03	4.5	0.4	1.6	1.9	4.5
01Jan2000	03:04	4.6	0.4	1.6	1.9	4.6
01Jan2000	03:05	4.6	0.4	1.6	1.9	4.6
01Jan2000	03:06	4.7	0.4	1.6	1.9	4.7
01Jan2000	03:07	4.8	0.4	1.6	1.9	4.8
01Jan2000	03:08	4.9	0.4	1.7	1.9	4.9
01Jan2000	03:09	4.9	0.4	1.7	1.9	4.9
01Jan2000	03:10	5.0	0.4	1.7	2.0	5.0
01Jan2000	03:11	5.0	0.4	1.7	2.0	5.0
01Jan2000	03:12	5.1	0.4	1.7	2.0	5.1
01Jan2000	03:13	5.1	0.4	1.7	2.0	5.1
01Jan2000	03:14	5.2	0.5	1.7	2.0	5.2
01Jan2000	03:15	5.2	0.5	1.8	2.0	5.2
01Jan2000	03:16	5.2	0.5	1.8	2.0	5.2
01Jan2000	03:17	5.3	0.5	1.8	2.0	5.3
01Jan2000	03:18	5.3	0.5	1.8	2.0	5.3
01Jan2000	03:19	5.4	0.5	1.8	2.0	5.4
01Jan2000	03:20	5.4	0.5	1.9	2.1	5.4
01Jan2000	03:21	5.5	0.5	1.9	2.1	5.5
01Jan2000	03:22	5.6	0.5	1.9	2.1	5.6
01Jan2000	03:23	5.8	0.5	1.9	2.1	5.8
01Jan2000	03:24	5.9	0.5	1.9	2.1	5.9
01Jan2000	03:25	6.0	0.5	1.9	2.1	6.0
01Jan2000	03:26	6.1	0.5	2.0	2.1	6.1
01Jan2000	03:27	6.2	0.5	2.0	2.1	6.2
01Jan2000	03:28	6.4	0.5	2.0	2.1	6.4
01Jan2000	03:29	6.5	0.5	2.0	2.2	6.5
01Jan2000	03:30	6.6	0.5	2.1	2.2	6.6
01Jan2000	03:31	6.7	0.5	2.1	2.2	6.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	6.8	0.5	2.1	2.2	6.8
01Jan2000	03:33	6.9	0.6	2.1	2.2	6.9
01Jan2000	03:34	7.0	0.6	2.2	2.2	7.0
01Jan2000	03:35	7.1	0.6	2.2	2.2	7.1
01Jan2000	03:36	7.1	0.6	2.2	2.3	7.1
01Jan2000	03:37	7.2	0.6	2.2	2.3	7.2
01Jan2000	03:38	7.3	0.6	2.3	2.3	7.3
01Jan2000	03:39	7.4	0.6	2.3	2.3	7.4
01Jan2000	03:40	7.5	0.6	2.3	2.3	7.5
01Jan2000	03:41	7.8	0.6	2.3	2.3	7.8
01Jan2000	03:42	8.2	0.6	2.4	2.3	8.2
01Jan2000	03:43	8.6	0.6	2.4	2.4	8.6
01Jan2000	03:44	8.9	0.6	2.4	2.4	8.9
01Jan2000	03:45	9.2	0.6	2.5	2.4	9.2
01Jan2000	03:46	9.6	0.7	2.5	2.4	9.6
01Jan2000	03:47	10.0	0.7	2.6	2.4	10.0
01Jan2000	03:48	10.3	0.7	2.6	2.5	10.3
01Jan2000	03:49	10.6	0.7	2.6	2.5	10.6
01Jan2000	03:50	11.0	0.7	2.7	2.5	11.0
01Jan2000	03:51	11.6	0.7	2.7	2.5	11.6
01Jan2000	03:52	12.2	0.7	2.8	2.5	12.2
01Jan2000	03:53	12.9	0.7	2.8	2.6	12.9
01Jan2000	03:54	13.5	0.7	2.9	2.6	13.5
01Jan2000	03:55	14.1	0.8	2.9	2.6	14.1
01Jan2000	03:56	14.7	0.8	3.0	2.7	14.7
01Jan2000	03:57	15.3	0.8	3.1	2.7	15.3
01Jan2000	03:58	16.0	0.8	3.1	2.7	16.0
01Jan2000	03:59	16.6	0.8	3.2	2.7	16.6
01Jan2000	04:00	17.2	0.9	3.2	2.7	17.2
01Jan2000	04:01	20.9	0.9	3.3	2.8	20.9
01Jan2000	04:02	24.6	0.9	3.3	2.8	24.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	28.3	0.9	3.4	2.8	28.3
01Jan2000	04:04	32.0	1.0	3.5	2.9	32.0
01Jan2000	04:05	35.7	1.0	3.7	2.9	35.7
01Jan2000	04:06	39.4	1.1	3.8	3.0	39.4
01Jan2000	04:07	43.1	1.1	3.9	3.1	43.1
01Jan2000	04:08	46.8	1.2	4.1	3.1	46.8
01Jan2000	04:09	50.5	1.2	4.3	3.2	50.5
01Jan2000	04:10	54.2	1.3	4.5	3.3	54.2
01Jan2000	04:11	49.6	1.4	4.6	3.3	49.6
01Jan2000	04:12	45.1	1.4	4.8	3.4	45.1
01Jan2000	04:13	40.6	1.5	5.0	3.4	40.6
01Jan2000	04:14	36.1	1.5	5.1	3.5	36.1
01Jan2000	04:15	31.5	1.6	5.2	3.5	31.5
01Jan2000	04:16	27.0	1.6	5.3	3.6	27.0
01Jan2000	04:17	22.5	1.6	5.4	3.6	22.5
01Jan2000	04:18	18.0	1.7	5.4	3.6	18.0
01Jan2000	04:19	13.4	1.7	5.5	3.6	13.4
01Jan2000	04:20	8.9	1.7	5.5	3.6	8.9
01Jan2000	04:21	8.6	1.7	5.5	3.6	8.6
01Jan2000	04:22	8.3	1.7	5.6	3.6	8.3
01Jan2000	04:23	8.0	1.7	5.6	3.7	8.0
01Jan2000	04:24	7.7	1.7	5.6	3.7	7.7
01Jan2000	04:25	7.4	1.7	5.6	3.7	7.4
01Jan2000	04:26	7.1	1.7	5.6	3.7	7.1
01Jan2000	04:27	6.8	1.7	5.6	3.7	6.8
01Jan2000	04:28	6.5	1.7	5.6	3.7	6.5
01Jan2000	04:29	6.2	1.7	5.7	3.7	6.2
01Jan2000	04:30	5.9	1.7	5.7	3.7	5.9
01Jan2000	04:31	5.8	1.7	5.7	3.7	5.8
01Jan2000	04:32	5.6	1.7	5.7	3.7	5.6
01Jan2000	04:33	5.5	1.7	5.7	3.7	5.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	5.4	1.8	5.7	3.7	5.4
01Jan2000	04:35	5.2	1.8	5.7	3.7	5.2
01Jan2000	04:36	5.1	1.8	5.7	3.7	5.1
01Jan2000	04:37	5.0	1.8	5.7	3.7	5.0
01Jan2000	04:38	4.9	1.8	5.7	3.7	4.9
01Jan2000	04:39	4.7	1.8	5.7	3.7	4.7
01Jan2000	04:40	4.6	1.8	5.7	3.7	4.6
01Jan2000	04:41	4.5	1.8	5.7	3.7	4.5
01Jan2000	04:42	4.5	1.8	5.7	3.7	4.5
01Jan2000	04:43	4.4	1.8	5.7	3.7	4.4
01Jan2000	04:44	4.3	1.8	5.7	3.7	4.3
01Jan2000	04:45	4.2	1.8	5.7	3.7	4.2
01Jan2000	04:46	4.2	1.8	5.7	3.7	4.2
01Jan2000	04:47	4.1	1.8	5.7	3.7	4.1
01Jan2000	04:48	4.0	1.8	5.7	3.7	4.0
01Jan2000	04:49	4.0	1.8	5.7	3.7	4.0
01Jan2000	04:50	3.9	1.8	5.7	3.7	3.9
01Jan2000	04:51	3.8	1.8	5.7	3.7	3.8
01Jan2000	04:52	3.8	1.8	5.7	3.7	3.8
01Jan2000	04:53	3.8	1.8	5.7	3.7	3.8
01Jan2000	04:54	3.7	1.8	5.7	3.7	3.7
01Jan2000	04:55	3.6	1.8	5.7	3.7	3.6
01Jan2000	04:56	3.6	1.8	5.7	3.7	3.6
01Jan2000	04:57	3.6	1.8	5.7	3.7	3.6
01Jan2000	04:58	3.5	1.8	5.7	3.7	3.5
01Jan2000	04:59	3.4	1.8	5.7	3.7	3.4
01Jan2000	05:00	3.4	1.8	5.7	3.7	3.4
01Jan2000	05:01	3.4	1.8	5.7	3.7	3.4
01Jan2000	05:02	3.3	1.8	5.7	3.7	3.3
01Jan2000	05:03	3.3	1.8	5.7	3.7	3.3
01Jan2000	05:04	3.2	1.8	5.7	3.7	3.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	3.2	1.8	5.7	3.7	3.2
01Jan2000	05:06	3.2	1.8	5.7	3.7	3.2
01Jan2000	05:07	3.1	1.8	5.7	3.7	3.1
01Jan2000	05:08	3.1	1.8	5.7	3.7	3.1
01Jan2000	05:09	3.0	1.8	5.7	3.7	3.0
01Jan2000	05:10	3.0	1.8	5.7	3.7	3.0
01Jan2000	05:11	3.0	1.8	5.7	3.7	3.0
01Jan2000	05:12	2.9	1.8	5.7	3.7	2.9
01Jan2000	05:13	2.9	1.8	5.7	3.7	2.9
01Jan2000	05:14	2.9	1.8	5.7	3.7	2.9
01Jan2000	05:15	2.8	1.8	5.7	3.7	2.8
01Jan2000	05:16	2.8	1.8	5.7	3.7	2.8
01Jan2000	05:17	2.8	1.8	5.7	3.7	2.8
01Jan2000	05:18	2.8	1.8	5.7	3.7	2.8
01Jan2000	05:19	2.7	1.8	5.7	3.7	2.7
01Jan2000	05:20	2.7	1.7	5.7	3.7	2.7
01Jan2000	05:21	2.7	1.7	5.7	3.7	2.7
01Jan2000	05:22	2.7	1.7	5.7	3.7	2.7
01Jan2000	05:23	2.6	1.7	5.7	3.7	2.6
01Jan2000	05:24	2.6	1.7	5.7	3.7	2.6
01Jan2000	05:25	2.6	1.7	5.7	3.7	2.6
01Jan2000	05:26	2.6	1.7	5.7	3.7	2.6
01Jan2000	05:27	2.6	1.7	5.7	3.7	2.6
01Jan2000	05:28	2.5	1.7	5.7	3.7	2.5
01Jan2000	05:29	2.5	1.7	5.7	3.7	2.5
01Jan2000	05:30	2.5	1.7	5.6	3.7	2.5
01Jan2000	05:31	2.5	1.7	5.6	3.7	2.5
01Jan2000	05:32	2.5	1.7	5.6	3.7	2.5
01Jan2000	05:33	2.4	1.7	5.6	3.7	2.4
01Jan2000	05:34	2.4	1.7	5.6	3.7	2.4
01Jan2000	05:35	2.4	1.7	5.6	3.7	2.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	2.4	1.7	5.6	3.7	2.4
01Jan2000	05:37	2.4	1.7	5.6	3.7	2.4
01Jan2000	05:38	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:39	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:40	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:41	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:42	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:43	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:44	2.3	1.7	5.6	3.7	2.3
01Jan2000	05:45	2.2	1.7	5.6	3.7	2.2
01Jan2000	05:46	2.2	1.7	5.6	3.7	2.2
01Jan2000	05:47	2.2	1.7	5.6	3.6	2.2
01Jan2000	05:48	2.2	1.7	5.6	3.6	2.2
01Jan2000	05:49	2.2	1.7	5.6	3.6	2.2
01Jan2000	05:50	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:51	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:52	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:53	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:54	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:55	2.2	1.7	5.5	3.6	2.2
01Jan2000	05:56	2.1	1.7	5.5	3.6	2.1
01Jan2000	05:57	2.1	1.7	5.5	3.6	2.1
01Jan2000	05:58	2.1	1.7	5.5	3.6	2.1
01Jan2000	05:59	2.1	1.7	5.5	3.6	2.1
01Jan2000	06:00	2.1	1.7	5.5	3.6	2.1
01Jan2000	06:01	1.9	1.7	5.5	3.6	1.9
01Jan2000	06:02	1.7	1.7	5.5	3.6	1.7
01Jan2000	06:03	1.5	1.7	5.5	3.6	1.5
01Jan2000	06:04	1.3	1.7	5.5	3.6	1.3
01Jan2000	06:05	1.0	1.7	5.5	3.6	1.0
01Jan2000	06:06	0.8	1.7	5.4	3.6	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.6	1.7	5.4	3.6	0.6
01Jan2000	06:08	0.4	1.7	5.4	3.6	0.4
01Jan2000	06:09	0.2	1.6	5.4	3.6	0.2
01Jan2000	06:10	0.0	1.6	5.4	3.6	0.0

West Valley Detention - Node 2380

Node to Node		Code	C Factor	Area (ac.)	C x A
2413	2412	2	0.57	0.10	0.06
2412	2412.5	6	0.57	1.84	1.05
2410	2409	2	0.57	0.07	0.04
2409	2411	6	0.57	3.81	2.17
2407	2406	2	0.57	0.10	0.06
2406	2405	6	0.57	1.61	0.92
2403	2402	2	0.57	0.13	0.07
2402	2404	6	0.57	1.93	1.10
2401	2380	5	0.57	1.66	0.95
2390	2389	2	0.57	0.20	0.11
2389	2389.5	6	0.57	0.91	0.52
2387	2386	2	0.57	0.11	0.06
2386	2385	6	0.57	0.95	0.54
2383	2382	2	0.57	0.20	0.11
2382	2384	6	0.57	0.20	0.11
			Total	13.82	7.88
			Avg C =	0.57	

WEST VALLEY DETENTION – NODE 2380

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 2/15/2017

TIME OF CONCENTRATION 10 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 13.8 ACRES

RUNOFF COEFFICIENT 0.57

PEAK DISCHARGE 45.59 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 10	DISCHARGE (CFS) = 1.6
TIME (MIN) = 20	DISCHARGE (CFS) = 1.7
TIME (MIN) = 30	DISCHARGE (CFS) = 1.7
TIME (MIN) = 40	DISCHARGE (CFS) = 1.8
TIME (MIN) = 50	DISCHARGE (CFS) = 1.9
TIME (MIN) = 60	DISCHARGE (CFS) = 1.9
TIME (MIN) = 70	DISCHARGE (CFS) = 2
TIME (MIN) = 80	DISCHARGE (CFS) = 2
TIME (MIN) = 90	DISCHARGE (CFS) = 2.1
TIME (MIN) = 100	DISCHARGE (CFS) = 2.2
TIME (MIN) = 110	DISCHARGE (CFS) = 2.3
TIME (MIN) = 120	DISCHARGE (CFS) = 2.4
TIME (MIN) = 130	DISCHARGE (CFS) = 2.6
TIME (MIN) = 140	DISCHARGE (CFS) = 2.7
TIME (MIN) = 150	DISCHARGE (CFS) = 2.9
TIME (MIN) = 160	DISCHARGE (CFS) = 3.1

TIME (MIN) = 170 DISCHARGE (CFS) = 3.4
TIME (MIN) = 180 DISCHARGE (CFS) = 3.6
TIME (MIN) = 190 DISCHARGE (CFS) = 4.1
TIME (MIN) = 200 DISCHARGE (CFS) = 4.5
TIME (MIN) = 210 DISCHARGE (CFS) = 5.5
TIME (MIN) = 220 DISCHARGE (CFS) = 6.3
TIME (MIN) = 230 DISCHARGE (CFS) = 9.2
TIME (MIN) = 240 DISCHARGE (CFS) = 13.7
TIME (MIN) = 250 DISCHARGE (CFS) = 45.59
TIME (MIN) = 260 DISCHARGE (CFS) = 7.4
TIME (MIN) = 270 DISCHARGE (CFS) = 4.9
TIME (MIN) = 280 DISCHARGE (CFS) = 3.9
TIME (MIN) = 290 DISCHARGE (CFS) = 3.2
TIME (MIN) = 300 DISCHARGE (CFS) = 2.8
TIME (MIN) = 310 DISCHARGE (CFS) = 2.5
TIME (MIN) = 320 DISCHARGE (CFS) = 2.3
TIME (MIN) = 330 DISCHARGE (CFS) = 2.1
TIME (MIN) = 340 DISCHARGE (CFS) = 1.9
TIME (MIN) = 350 DISCHARGE (CFS) = 1.8
TIME (MIN) = 360 DISCHARGE (CFS) = 1.7
TIME (MIN) = 370 DISCHARGE (CFS) = 0

Detention 25 West Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are three buttons: 'Components', 'Compute', and 'Results'. The bottom pane is titled 'Source' and contains tabs for 'Inflow' and 'Options'. The 'Inflow' tab is active, showing configuration fields for the selected 'Basin Inflow' element.

Detention 25W Pr

- Basin Models
 - Basin 25W
 - Basin Inflow**
 - Discharge Gage
 - Detention Basin 25W
 - Outlets
 - Outlet 1
- Meteorologic Models
- Control Specifications
- Time-Series Data
 - Discharge Gages
 - Node 2380.1 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
- Paired Data
 - Elevation-Storage Functions
 - Basin 25W Stage-Storage

Components Compute Results

Source Inflow Options

Basin Name: Basin 25W
Element Name: Basin Inflow

Description: Node 2380.1

Downstream: Detention Basin 25W

Area (MI²): 0.026

Flow Method: Discharge Gage

Detention 25W Pr

Basin Models

Basin 25W

Basin Inflow

Discharge Gage

Detention Basin 25W

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 2380.1 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:10

Paired Data

Elevation-Storage Functions

Basin 25W Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 25W

Element Name: Detention Basin 25W

Method: Orifice Outlet

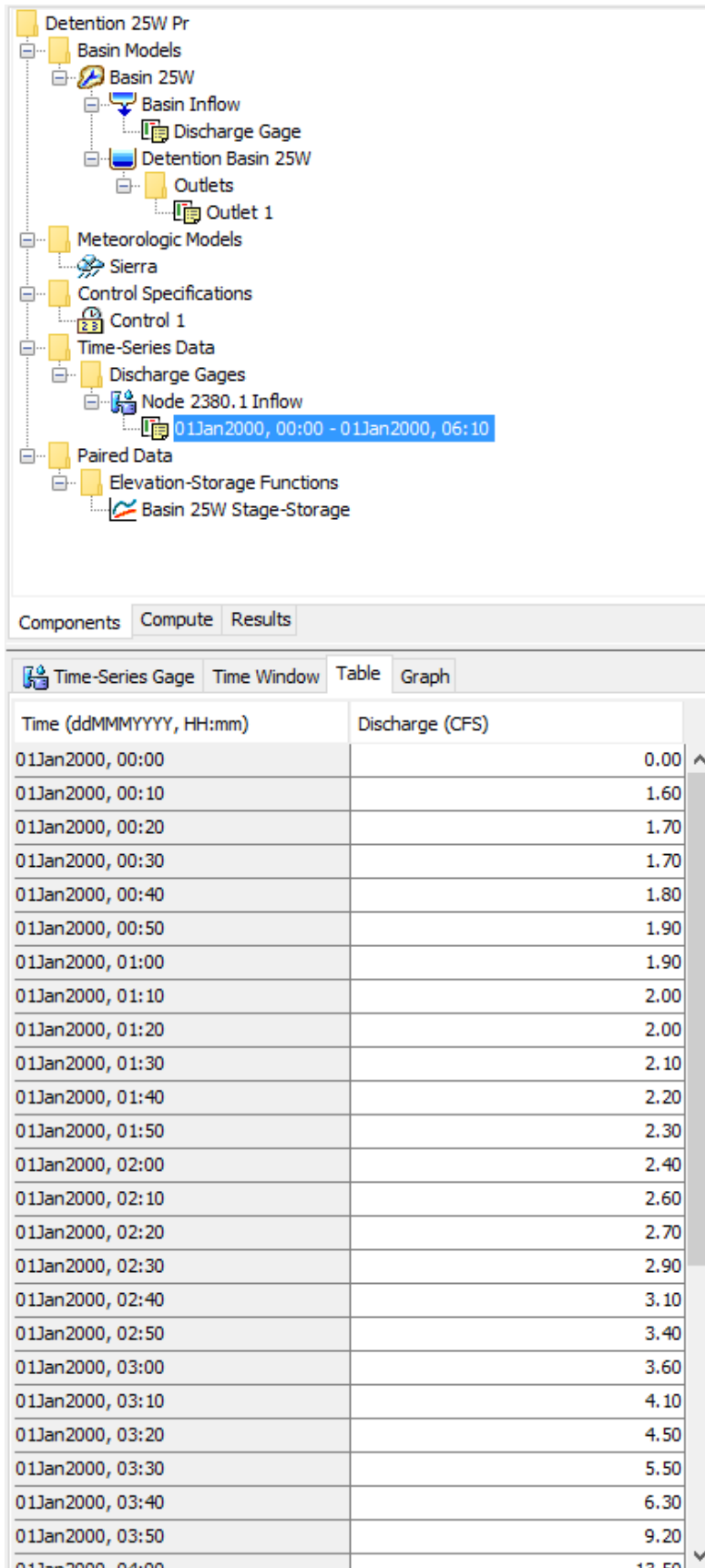
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.165

*Area (FT2) 1.155

*Coefficient: 0.60



Detention 25W Pr

- Basin Models
 - Basin 25W
 - Basin Inflow
 - Detention Basin 25W
 - Outlets
 - Outlet 1
- Meteorologic Models
 - Sierra
- Control Specifications
 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 2380.1 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
- Paired Data
 - Elevation-Storage Functions
 - Basin 25W Stage-Storage

Components Compute Results

Paired Data Table Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	2.187

Project: Detention 25W Pr Simulation Run: Run 1
Reservoir: Detention Basin 25W

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 25W
End of Run:	01Jan2000, 06:10	Meteorologic Model:	Sierra
Compute Time:	16Feb2017, 10:19:23	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	45.6 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:10
Peak Discharge:	7.4 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:20
Inflow Volume:	2.3 (AC-FT)	Peak Storage:	1.1 (AC-FT)
Discharge Volume:	1.8 (AC-FT)	Peak Elevation:	2.0 (FT)

Project: Detention 25W Pr Simulation Run: Run 1
Reservoir: Detention Basin 25W

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 25W
End of Run: 01Jan2000, 06:10 Meteorologic Model: Sierra
Compute Time: 16Feb2017, 10:19:23 Control Specifications:Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.2	0.0	0.0	0.0
01Jan2000	00:02	0.3	0.0	0.0	0.0
01Jan2000	00:03	0.5	0.0	0.0	0.0
01Jan2000	00:04	0.6	0.0	0.0	0.0
01Jan2000	00:05	0.8	0.0	0.0	0.0
01Jan2000	00:06	1.0	0.0	0.0	0.0
01Jan2000	00:07	1.1	0.0	0.0	0.0
01Jan2000	00:08	1.3	0.0	0.0	0.0
01Jan2000	00:09	1.4	0.0	0.0	0.0
01Jan2000	00:10	1.6	0.0	0.0	0.0
01Jan2000	00:11	1.6	0.0	0.0	0.0
01Jan2000	00:12	1.6	0.0	0.0	0.0
01Jan2000	00:13	1.6	0.0	0.0	0.0
01Jan2000	00:14	1.6	0.0	0.0	0.0
01Jan2000	00:15	1.6	0.0	0.0	0.0
01Jan2000	00:16	1.7	0.0	0.0	0.0
01Jan2000	00:17	1.7	0.0	0.0	0.0
01Jan2000	00:18	1.7	0.0	0.1	0.0
01Jan2000	00:19	1.7	0.0	0.1	0.0
01Jan2000	00:20	1.7	0.0	0.1	0.0
01Jan2000	00:21	1.7	0.0	0.1	0.0
01Jan2000	00:22	1.7	0.0	0.1	0.0
01Jan2000	00:23	1.7	0.0	0.1	0.0
01Jan2000	00:24	1.7	0.0	0.1	0.0
01Jan2000	00:25	1.7	0.0	0.1	0.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:26	1.7	0.0	0.1	0.0
01Jan2000	00:27	1.7	0.1	0.1	0.0
01Jan2000	00:28	1.7	0.1	0.1	0.0
01Jan2000	00:29	1.7	0.1	0.1	0.0
01Jan2000	00:30	1.7	0.1	0.1	0.0
01Jan2000	00:31	1.7	0.1	0.1	0.0
01Jan2000	00:32	1.7	0.1	0.1	0.0
01Jan2000	00:33	1.7	0.1	0.1	0.0
01Jan2000	00:34	1.7	0.1	0.1	0.0
01Jan2000	00:35	1.8	0.1	0.1	0.0
01Jan2000	00:36	1.8	0.1	0.1	0.0
01Jan2000	00:37	1.8	0.1	0.1	0.0
01Jan2000	00:38	1.8	0.1	0.1	0.0
01Jan2000	00:39	1.8	0.1	0.1	0.0
01Jan2000	00:40	1.8	0.1	0.1	0.0
01Jan2000	00:41	1.8	0.1	0.2	0.0
01Jan2000	00:42	1.8	0.1	0.2	0.0
01Jan2000	00:43	1.8	0.1	0.2	0.0
01Jan2000	00:44	1.8	0.1	0.2	0.2
01Jan2000	00:45	1.9	0.1	0.2	0.4
01Jan2000	00:46	1.9	0.1	0.2	0.5
01Jan2000	00:47	1.9	0.1	0.2	0.6
01Jan2000	00:48	1.9	0.1	0.2	0.7
01Jan2000	00:49	1.9	0.1	0.2	0.8
01Jan2000	00:50	1.9	0.1	0.2	0.8
01Jan2000	00:51	1.9	0.1	0.2	0.9
01Jan2000	00:52	1.9	0.1	0.2	0.9
01Jan2000	00:53	1.9	0.1	0.2	0.9
01Jan2000	00:54	1.9	0.1	0.2	1.0
01Jan2000	00:55	1.9	0.1	0.2	1.0
01Jan2000	00:56	1.9	0.1	0.2	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	00:57	1.9	0.1	0.2	1.1
01Jan2000	00:58	1.9	0.1	0.2	1.1
01Jan2000	00:59	1.9	0.1	0.2	1.1
01Jan2000	01:00	1.9	0.1	0.2	1.2
01Jan2000	01:01	1.9	0.1	0.2	1.2
01Jan2000	01:02	1.9	0.1	0.2	1.2
01Jan2000	01:03	1.9	0.1	0.2	1.2
01Jan2000	01:04	1.9	0.1	0.2	1.3
01Jan2000	01:05	2.0	0.1	0.2	1.3
01Jan2000	01:06	2.0	0.1	0.2	1.3
01Jan2000	01:07	2.0	0.1	0.2	1.3
01Jan2000	01:08	2.0	0.1	0.2	1.3
01Jan2000	01:09	2.0	0.1	0.2	1.4
01Jan2000	01:10	2.0	0.1	0.2	1.4
01Jan2000	01:11	2.0	0.1	0.2	1.4
01Jan2000	01:12	2.0	0.1	0.2	1.4
01Jan2000	01:13	2.0	0.1	0.2	1.4
01Jan2000	01:14	2.0	0.1	0.2	1.4
01Jan2000	01:15	2.0	0.1	0.2	1.5
01Jan2000	01:16	2.0	0.1	0.2	1.5
01Jan2000	01:17	2.0	0.1	0.2	1.5
01Jan2000	01:18	2.0	0.1	0.2	1.5
01Jan2000	01:19	2.0	0.1	0.2	1.5
01Jan2000	01:20	2.0	0.1	0.2	1.5
01Jan2000	01:21	2.0	0.1	0.2	1.5
01Jan2000	01:22	2.0	0.1	0.2	1.5
01Jan2000	01:23	2.0	0.1	0.2	1.6
01Jan2000	01:24	2.0	0.1	0.2	1.6
01Jan2000	01:25	2.0	0.1	0.2	1.6
01Jan2000	01:26	2.1	0.1	0.2	1.6
01Jan2000	01:27	2.1	0.1	0.2	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:28	2.1	0.1	0.2	1.6
01Jan2000	01:29	2.1	0.1	0.3	1.6
01Jan2000	01:30	2.1	0.1	0.3	1.6
01Jan2000	01:31	2.1	0.1	0.3	1.6
01Jan2000	01:32	2.1	0.1	0.3	1.7
01Jan2000	01:33	2.1	0.1	0.3	1.7
01Jan2000	01:34	2.1	0.1	0.3	1.7
01Jan2000	01:35	2.2	0.1	0.3	1.7
01Jan2000	01:36	2.2	0.1	0.3	1.7
01Jan2000	01:37	2.2	0.1	0.3	1.7
01Jan2000	01:38	2.2	0.1	0.3	1.7
01Jan2000	01:39	2.2	0.1	0.3	1.7
01Jan2000	01:40	2.2	0.1	0.3	1.7
01Jan2000	01:41	2.2	0.1	0.3	1.8
01Jan2000	01:42	2.2	0.1	0.3	1.8
01Jan2000	01:43	2.2	0.1	0.3	1.8
01Jan2000	01:44	2.2	0.1	0.3	1.8
01Jan2000	01:45	2.2	0.1	0.3	1.8
01Jan2000	01:46	2.3	0.1	0.3	1.8
01Jan2000	01:47	2.3	0.1	0.3	1.8
01Jan2000	01:48	2.3	0.1	0.3	1.8
01Jan2000	01:49	2.3	0.1	0.3	1.8
01Jan2000	01:50	2.3	0.2	0.3	1.8
01Jan2000	01:51	2.3	0.2	0.3	1.9
01Jan2000	01:52	2.3	0.2	0.3	1.9
01Jan2000	01:53	2.3	0.2	0.3	1.9
01Jan2000	01:54	2.3	0.2	0.3	1.9
01Jan2000	01:55	2.3	0.2	0.3	1.9
01Jan2000	01:56	2.4	0.2	0.3	1.9
01Jan2000	01:57	2.4	0.2	0.3	1.9
01Jan2000	01:58	2.4	0.2	0.3	1.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	01:59	2.4	0.2	0.3	1.9
01Jan2000	02:00	2.4	0.2	0.3	1.9
01Jan2000	02:01	2.4	0.2	0.3	1.9
01Jan2000	02:02	2.4	0.2	0.3	2.0
01Jan2000	02:03	2.5	0.2	0.3	2.0
01Jan2000	02:04	2.5	0.2	0.3	2.0
01Jan2000	02:05	2.5	0.2	0.3	2.0
01Jan2000	02:06	2.5	0.2	0.3	2.0
01Jan2000	02:07	2.5	0.2	0.3	2.0
01Jan2000	02:08	2.6	0.2	0.3	2.0
01Jan2000	02:09	2.6	0.2	0.3	2.0
01Jan2000	02:10	2.6	0.2	0.3	2.0
01Jan2000	02:11	2.6	0.2	0.3	2.0
01Jan2000	02:12	2.6	0.2	0.3	2.1
01Jan2000	02:13	2.6	0.2	0.3	2.1
01Jan2000	02:14	2.6	0.2	0.3	2.1
01Jan2000	02:15	2.7	0.2	0.3	2.1
01Jan2000	02:16	2.7	0.2	0.3	2.1
01Jan2000	02:17	2.7	0.2	0.3	2.1
01Jan2000	02:18	2.7	0.2	0.3	2.1
01Jan2000	02:19	2.7	0.2	0.3	2.1
01Jan2000	02:20	2.7	0.2	0.3	2.1
01Jan2000	02:21	2.7	0.2	0.3	2.2
01Jan2000	02:22	2.7	0.2	0.3	2.2
01Jan2000	02:23	2.8	0.2	0.3	2.2
01Jan2000	02:24	2.8	0.2	0.3	2.2
01Jan2000	02:25	2.8	0.2	0.3	2.2
01Jan2000	02:26	2.8	0.2	0.3	2.2
01Jan2000	02:27	2.8	0.2	0.3	2.2
01Jan2000	02:28	2.9	0.2	0.3	2.2
01Jan2000	02:29	2.9	0.2	0.3	2.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	02:30	2.9	0.2	0.3	2.2
01Jan2000	02:31	2.9	0.2	0.3	2.3
01Jan2000	02:32	2.9	0.2	0.3	2.3
01Jan2000	02:33	3.0	0.2	0.3	2.3
01Jan2000	02:34	3.0	0.2	0.3	2.3
01Jan2000	02:35	3.0	0.2	0.3	2.3
01Jan2000	02:36	3.0	0.2	0.3	2.3
01Jan2000	02:37	3.0	0.2	0.3	2.3
01Jan2000	02:38	3.1	0.2	0.3	2.3
01Jan2000	02:39	3.1	0.2	0.3	2.4
01Jan2000	02:40	3.1	0.2	0.3	2.4
01Jan2000	02:41	3.1	0.2	0.3	2.4
01Jan2000	02:42	3.2	0.2	0.3	2.4
01Jan2000	02:43	3.2	0.2	0.4	2.4
01Jan2000	02:44	3.2	0.2	0.4	2.4
01Jan2000	02:45	3.2	0.2	0.4	2.4
01Jan2000	02:46	3.3	0.2	0.4	2.4
01Jan2000	02:47	3.3	0.2	0.4	2.5
01Jan2000	02:48	3.3	0.2	0.4	2.5
01Jan2000	02:49	3.4	0.2	0.4	2.5
01Jan2000	02:50	3.4	0.2	0.4	2.5
01Jan2000	02:51	3.4	0.2	0.4	2.5
01Jan2000	02:52	3.4	0.2	0.4	2.5
01Jan2000	02:53	3.5	0.2	0.4	2.5
01Jan2000	02:54	3.5	0.2	0.4	2.6
01Jan2000	02:55	3.5	0.2	0.4	2.6
01Jan2000	02:56	3.5	0.2	0.4	2.6
01Jan2000	02:57	3.5	0.2	0.4	2.6
01Jan2000	02:58	3.6	0.2	0.4	2.6
01Jan2000	02:59	3.6	0.2	0.4	2.6
01Jan2000	03:00	3.6	0.2	0.4	2.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:01	3.6	0.2	0.4	2.7
01Jan2000	03:02	3.7	0.2	0.4	2.7
01Jan2000	03:03	3.8	0.2	0.4	2.7
01Jan2000	03:04	3.8	0.2	0.4	2.7
01Jan2000	03:05	3.8	0.2	0.4	2.7
01Jan2000	03:06	3.9	0.2	0.4	2.7
01Jan2000	03:07	3.9	0.2	0.4	2.7
01Jan2000	03:08	4.0	0.2	0.4	2.8
01Jan2000	03:09	4.0	0.2	0.4	2.8
01Jan2000	03:10	4.1	0.2	0.4	2.8
01Jan2000	03:11	4.1	0.2	0.4	2.8
01Jan2000	03:12	4.2	0.2	0.4	2.8
01Jan2000	03:13	4.2	0.2	0.4	2.9
01Jan2000	03:14	4.3	0.2	0.4	2.9
01Jan2000	03:15	4.3	0.2	0.4	2.9
01Jan2000	03:16	4.3	0.2	0.4	2.9
01Jan2000	03:17	4.4	0.2	0.4	2.9
01Jan2000	03:18	4.4	0.2	0.4	3.0
01Jan2000	03:19	4.5	0.2	0.5	3.0
01Jan2000	03:20	4.5	0.2	0.5	3.0
01Jan2000	03:21	4.6	0.3	0.5	3.0
01Jan2000	03:22	4.7	0.3	0.5	3.0
01Jan2000	03:23	4.8	0.3	0.5	3.1
01Jan2000	03:24	4.9	0.3	0.5	3.1
01Jan2000	03:25	5.0	0.3	0.5	3.1
01Jan2000	03:26	5.1	0.3	0.5	3.1
01Jan2000	03:27	5.2	0.3	0.5	3.1
01Jan2000	03:28	5.3	0.3	0.5	3.2
01Jan2000	03:29	5.4	0.3	0.5	3.2
01Jan2000	03:30	5.5	0.3	0.5	3.2
01Jan2000	03:31	5.6	0.3	0.5	3.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	03:32	5.7	0.3	0.5	3.3
01Jan2000	03:33	5.7	0.3	0.5	3.3
01Jan2000	03:34	5.8	0.3	0.5	3.3
01Jan2000	03:35	5.9	0.3	0.5	3.4
01Jan2000	03:36	6.0	0.3	0.5	3.4
01Jan2000	03:37	6.1	0.3	0.5	3.4
01Jan2000	03:38	6.1	0.3	0.6	3.5
01Jan2000	03:39	6.2	0.3	0.6	3.5
01Jan2000	03:40	6.3	0.3	0.6	3.5
01Jan2000	03:41	6.6	0.3	0.6	3.6
01Jan2000	03:42	6.9	0.3	0.6	3.6
01Jan2000	03:43	7.2	0.3	0.6	3.6
01Jan2000	03:44	7.5	0.3	0.6	3.7
01Jan2000	03:45	7.8	0.3	0.6	3.7
01Jan2000	03:46	8.0	0.3	0.6	3.7
01Jan2000	03:47	8.3	0.3	0.6	3.8
01Jan2000	03:48	8.6	0.4	0.6	3.8
01Jan2000	03:49	8.9	0.4	0.7	3.9
01Jan2000	03:50	9.2	0.4	0.7	3.9
01Jan2000	03:51	9.6	0.4	0.7	4.0
01Jan2000	03:52	10.1	0.4	0.7	4.1
01Jan2000	03:53	10.5	0.4	0.7	4.1
01Jan2000	03:54	11.0	0.4	0.7	4.2
01Jan2000	03:55	11.4	0.4	0.7	4.2
01Jan2000	03:56	11.9	0.4	0.8	4.3
01Jan2000	03:57	12.4	0.4	0.8	4.4
01Jan2000	03:58	12.8	0.4	0.8	4.4
01Jan2000	03:59	13.2	0.5	0.8	4.5
01Jan2000	04:00	13.7	0.5	0.8	4.6
01Jan2000	04:01	16.9	0.5	0.9	4.7
01Jan2000	04:02	20.1	0.5	0.9	4.8

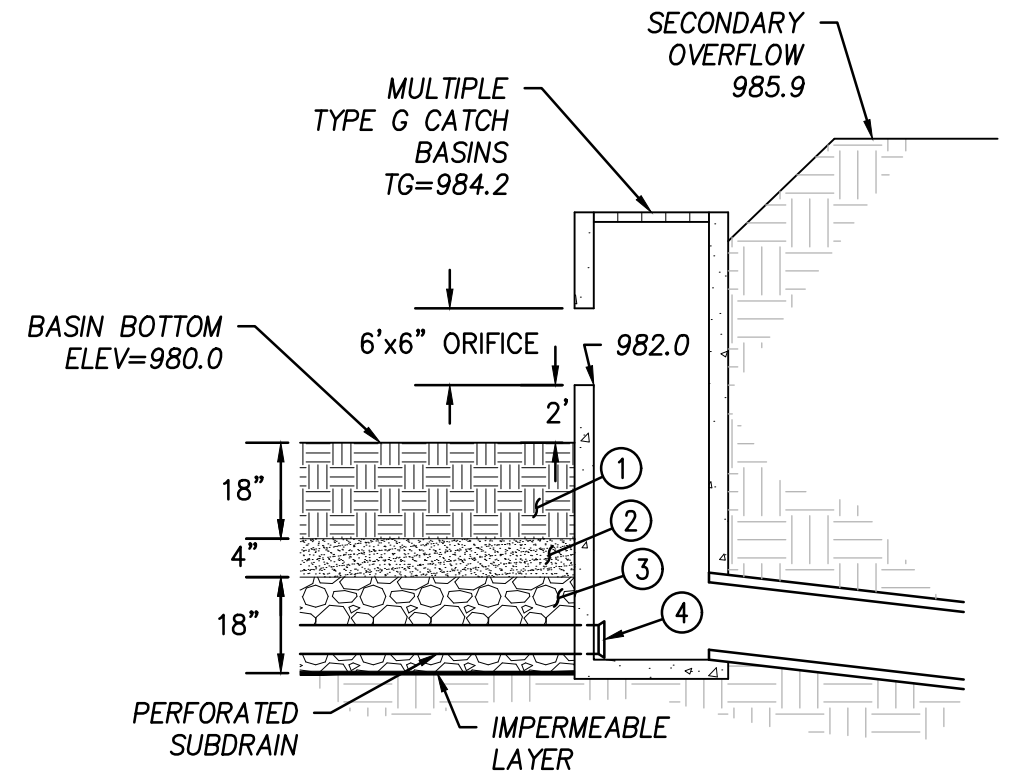
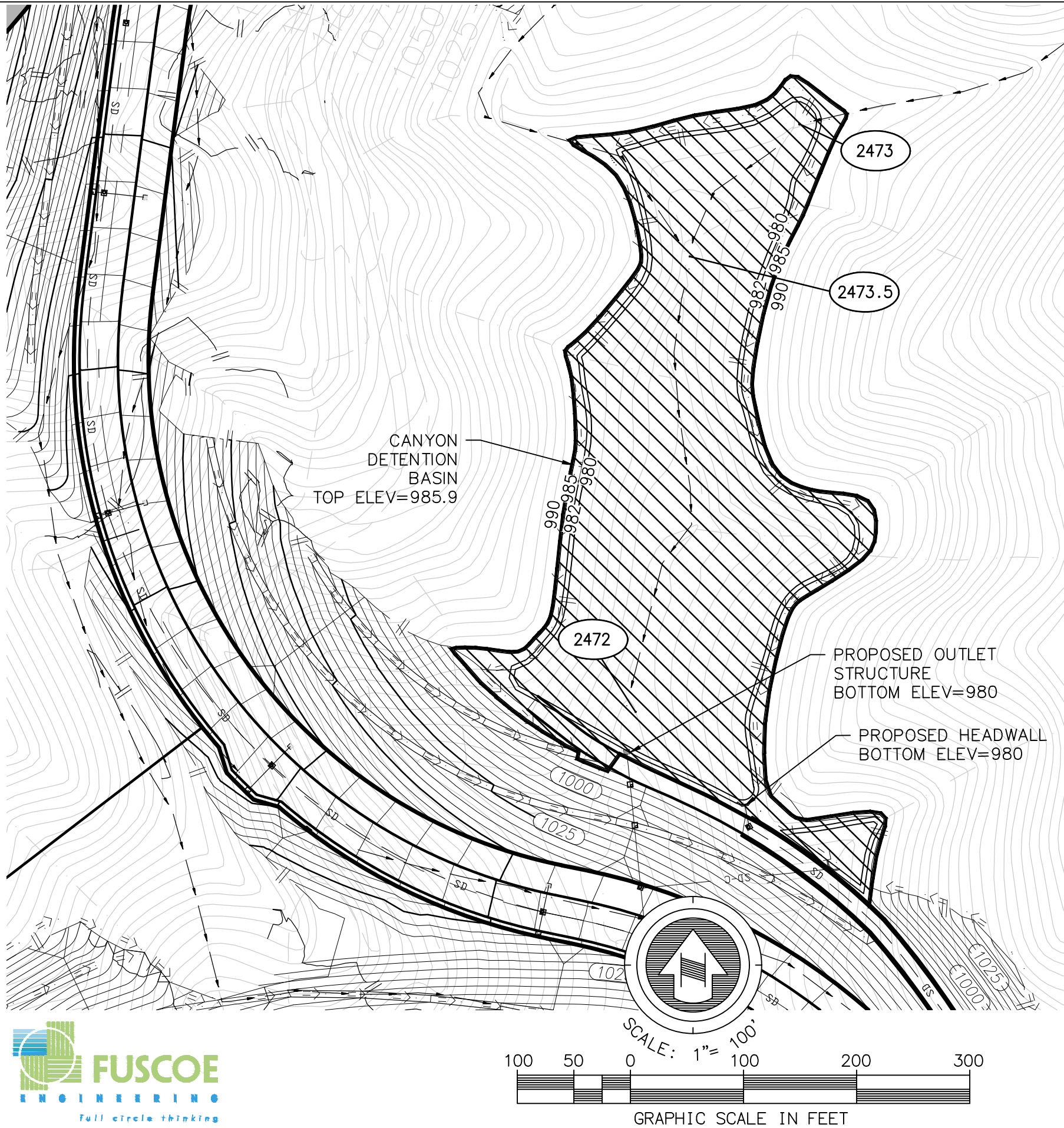
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:03	23.3	0.5	1.0	4.9
01Jan2000	04:04	26.5	0.5	1.0	5.1
01Jan2000	04:05	29.6	0.6	1.1	5.3
01Jan2000	04:06	32.8	0.6	1.1	5.4
01Jan2000	04:07	36.0	0.7	1.2	5.7
01Jan2000	04:08	39.2	0.7	1.3	5.9
01Jan2000	04:09	42.4	0.7	1.4	6.1
01Jan2000	04:10	45.6	0.8	1.5	6.3
01Jan2000	04:11	41.8	0.9	1.6	6.6
01Jan2000	04:12	38.0	0.9	1.6	6.7
01Jan2000	04:13	34.1	0.9	1.7	6.9
01Jan2000	04:14	30.3	1.0	1.8	7.1
01Jan2000	04:15	26.5	1.0	1.8	7.2
01Jan2000	04:16	22.7	1.0	1.9	7.3
01Jan2000	04:17	18.9	1.0	1.9	7.3
01Jan2000	04:18	15.0	1.1	1.9	7.4
01Jan2000	04:19	11.2	1.1	1.9	7.4
01Jan2000	04:20	7.4	1.1	2.0	7.4
01Jan2000	04:21	7.2	1.1	2.0	7.4
01Jan2000	04:22	6.9	1.1	1.9	7.4
01Jan2000	04:23	6.6	1.1	1.9	7.4
01Jan2000	04:24	6.4	1.1	1.9	7.4
01Jan2000	04:25	6.2	1.1	1.9	7.4
01Jan2000	04:26	5.9	1.1	1.9	7.4
01Jan2000	04:27	5.6	1.1	1.9	7.4
01Jan2000	04:28	5.4	1.1	1.9	7.4
01Jan2000	04:29	5.2	1.1	1.9	7.4
01Jan2000	04:30	4.9	1.0	1.9	7.4
01Jan2000	04:31	4.8	1.0	1.9	7.3
01Jan2000	04:32	4.7	1.0	1.9	7.3
01Jan2000	04:33	4.6	1.0	1.9	7.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	04:34	4.5	1.0	1.9	7.3
01Jan2000	04:35	4.4	1.0	1.9	7.3
01Jan2000	04:36	4.3	1.0	1.9	7.3
01Jan2000	04:37	4.2	1.0	1.9	7.3
01Jan2000	04:38	4.1	1.0	1.9	7.2
01Jan2000	04:39	4.0	1.0	1.9	7.2
01Jan2000	04:40	3.9	1.0	1.8	7.2
01Jan2000	04:41	3.8	1.0	1.8	7.2
01Jan2000	04:42	3.8	1.0	1.8	7.2
01Jan2000	04:43	3.7	1.0	1.8	7.2
01Jan2000	04:44	3.6	1.0	1.8	7.1
01Jan2000	04:45	3.6	1.0	1.8	7.1
01Jan2000	04:46	3.5	1.0	1.8	7.1
01Jan2000	04:47	3.4	1.0	1.8	7.1
01Jan2000	04:48	3.3	1.0	1.8	7.1
01Jan2000	04:49	3.3	1.0	1.8	7.0
01Jan2000	04:50	3.2	1.0	1.8	7.0
01Jan2000	04:51	3.2	1.0	1.7	7.0
01Jan2000	04:52	3.1	0.9	1.7	7.0
01Jan2000	04:53	3.1	0.9	1.7	6.9
01Jan2000	04:54	3.0	0.9	1.7	6.9
01Jan2000	04:55	3.0	0.9	1.7	6.9
01Jan2000	04:56	3.0	0.9	1.7	6.9
01Jan2000	04:57	2.9	0.9	1.7	6.9
01Jan2000	04:58	2.9	0.9	1.7	6.8
01Jan2000	04:59	2.8	0.9	1.7	6.8
01Jan2000	05:00	2.8	0.9	1.7	6.8
01Jan2000	05:01	2.8	0.9	1.6	6.8
01Jan2000	05:02	2.7	0.9	1.6	6.7
01Jan2000	05:03	2.7	0.9	1.6	6.7
01Jan2000	05:04	2.7	0.9	1.6	6.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:05	2.6	0.9	1.6	6.7
01Jan2000	05:06	2.6	0.9	1.6	6.7
01Jan2000	05:07	2.6	0.9	1.6	6.6
01Jan2000	05:08	2.6	0.9	1.6	6.6
01Jan2000	05:09	2.5	0.9	1.6	6.6
01Jan2000	05:10	2.5	0.9	1.6	6.6
01Jan2000	05:11	2.5	0.8	1.5	6.5
01Jan2000	05:12	2.5	0.8	1.5	6.5
01Jan2000	05:13	2.4	0.8	1.5	6.5
01Jan2000	05:14	2.4	0.8	1.5	6.5
01Jan2000	05:15	2.4	0.8	1.5	6.4
01Jan2000	05:16	2.4	0.8	1.5	6.4
01Jan2000	05:17	2.4	0.8	1.5	6.4
01Jan2000	05:18	2.3	0.8	1.5	6.4
01Jan2000	05:19	2.3	0.8	1.5	6.3
01Jan2000	05:20	2.3	0.8	1.5	6.3
01Jan2000	05:21	2.3	0.8	1.4	6.3
01Jan2000	05:22	2.3	0.8	1.4	6.3
01Jan2000	05:23	2.2	0.8	1.4	6.2
01Jan2000	05:24	2.2	0.8	1.4	6.2
01Jan2000	05:25	2.2	0.8	1.4	6.2
01Jan2000	05:26	2.2	0.8	1.4	6.2
01Jan2000	05:27	2.2	0.8	1.4	6.1
01Jan2000	05:28	2.1	0.8	1.4	6.1
01Jan2000	05:29	2.1	0.7	1.4	6.1
01Jan2000	05:30	2.1	0.7	1.4	6.1
01Jan2000	05:31	2.1	0.7	1.3	6.0
01Jan2000	05:32	2.1	0.7	1.3	6.0
01Jan2000	05:33	2.0	0.7	1.3	6.0
01Jan2000	05:34	2.0	0.7	1.3	6.0
01Jan2000	05:35	2.0	0.7	1.3	5.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	05:36	2.0	0.7	1.3	5.9
01Jan2000	05:37	2.0	0.7	1.3	5.9
01Jan2000	05:38	1.9	0.7	1.3	5.9
01Jan2000	05:39	1.9	0.7	1.3	5.8
01Jan2000	05:40	1.9	0.7	1.3	5.8
01Jan2000	05:41	1.9	0.7	1.2	5.8
01Jan2000	05:42	1.9	0.7	1.2	5.8
01Jan2000	05:43	1.9	0.7	1.2	5.7
01Jan2000	05:44	1.9	0.7	1.2	5.7
01Jan2000	05:45	1.9	0.7	1.2	5.7
01Jan2000	05:46	1.8	0.7	1.2	5.6
01Jan2000	05:47	1.8	0.6	1.2	5.6
01Jan2000	05:48	1.8	0.6	1.2	5.6
01Jan2000	05:49	1.8	0.6	1.2	5.6
01Jan2000	05:50	1.8	0.6	1.2	5.5
01Jan2000	05:51	1.8	0.6	1.1	5.5
01Jan2000	05:52	1.8	0.6	1.1	5.5
01Jan2000	05:53	1.8	0.6	1.1	5.5
01Jan2000	05:54	1.8	0.6	1.1	5.4
01Jan2000	05:55	1.8	0.6	1.1	5.4
01Jan2000	05:56	1.7	0.6	1.1	5.4
01Jan2000	05:57	1.7	0.6	1.1	5.4
01Jan2000	05:58	1.7	0.6	1.1	5.3
01Jan2000	05:59	1.7	0.6	1.1	5.3
01Jan2000	06:00	1.7	0.6	1.1	5.3
01Jan2000	06:01	1.5	0.6	1.1	5.3
01Jan2000	06:02	1.4	0.6	1.0	5.2
01Jan2000	06:03	1.2	0.6	1.0	5.2
01Jan2000	06:04	1.0	0.6	1.0	5.2
01Jan2000	06:05	0.8	0.6	1.0	5.1
01Jan2000	06:06	0.7	0.6	1.0	5.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)
01Jan2000	06:07	0.5	0.5	1.0	5.1
01Jan2000	06:08	0.3	0.5	1.0	5.0
01Jan2000	06:09	0.2	0.5	1.0	5.0
01Jan2000	06:10	0.0	0.5	1.0	5.0



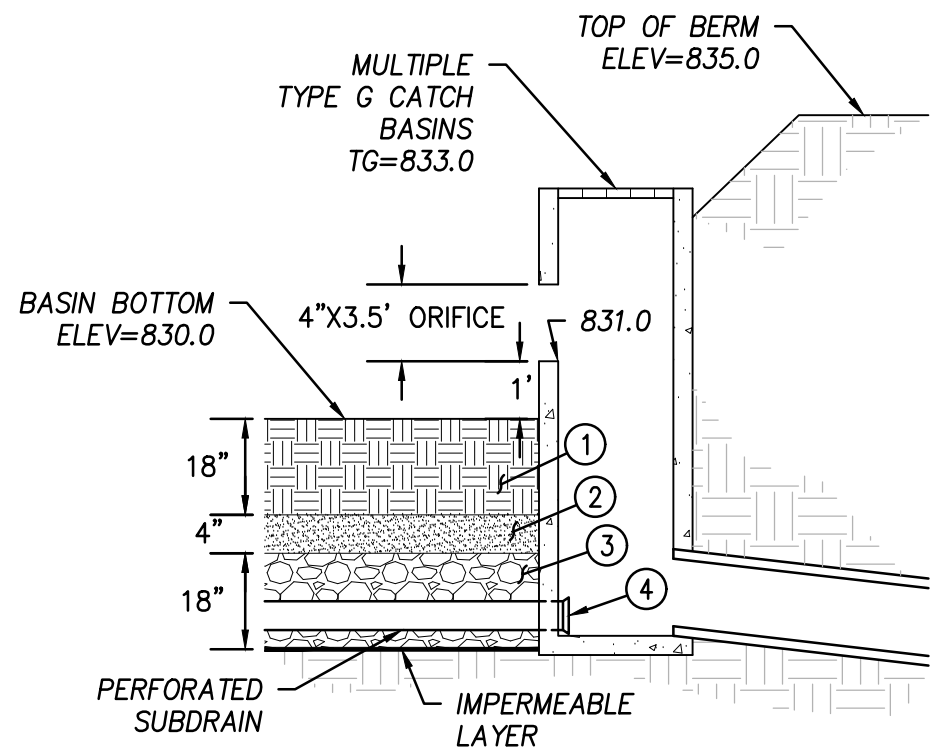
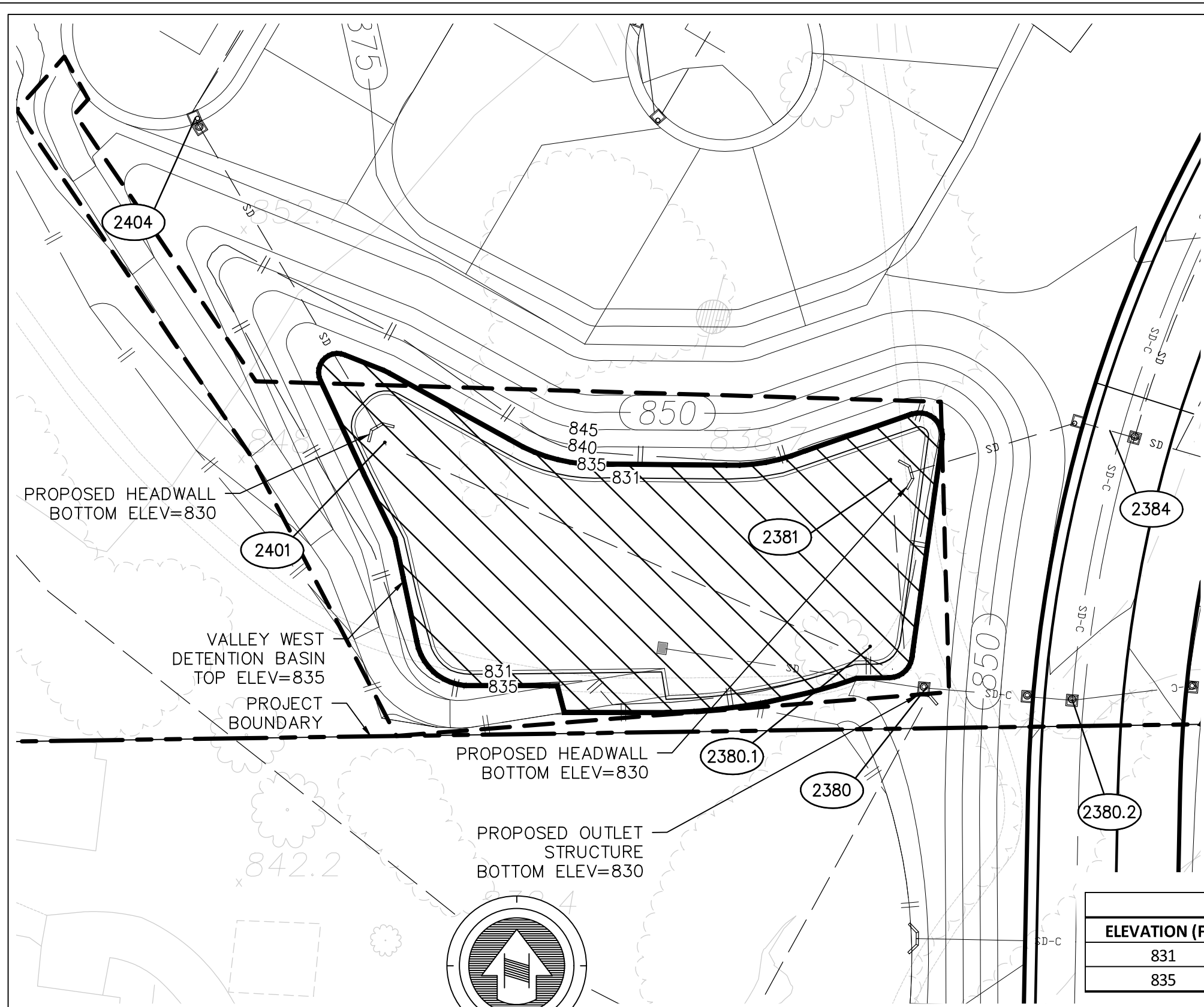
CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

**PROPOSED OUTLET STRUCTURE
NOT TO SCALE**

BASIN B - PROPOSED DETENTION 25C (BMP M1MR1K1)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
980	0	91782	2.11	0.000
982	2	99336	2.28	4.387
985	5	117735	2.70	12.025
985.9	5.9	121725	2.79	14.459

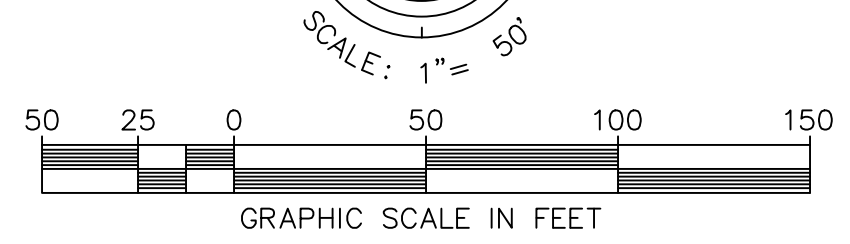
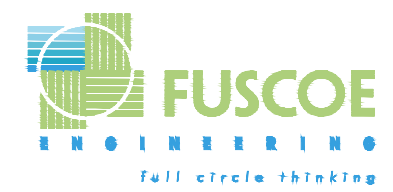
**NEWLAND SIERRA
BASIN B - PROPOSED DETENTION BASINS
CANYON BASIN
DETENTION 25C (BMP M1MR1K1)**



- CONSTRUCTION NOTES:**
- ① 18" BIORETENTION SOIL MEDIA
 - ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
 - ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
 - ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

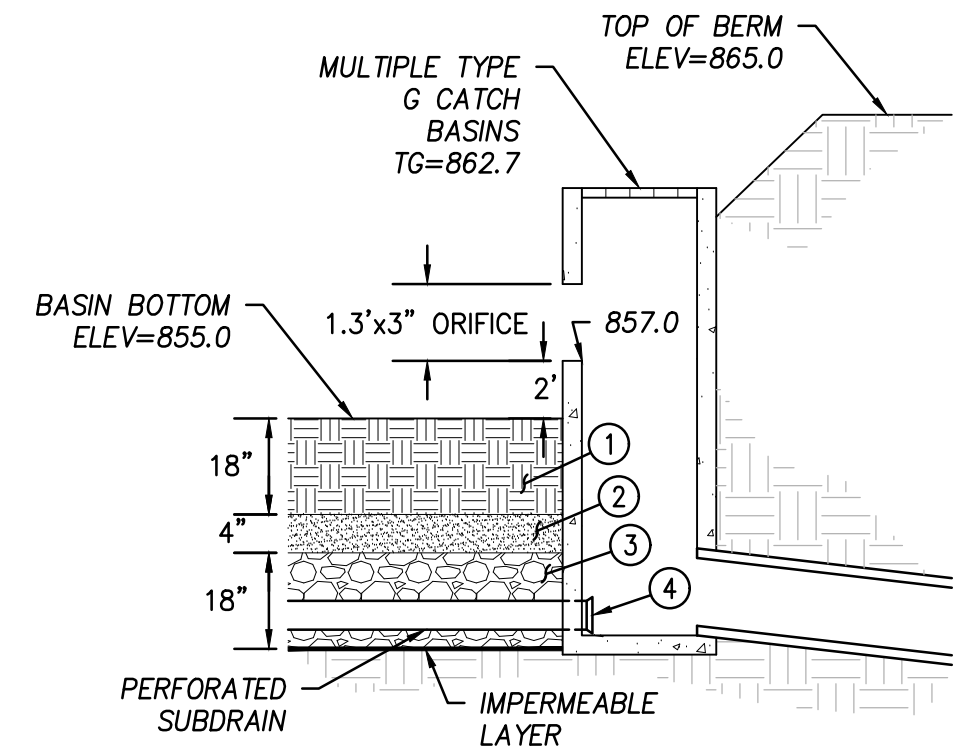
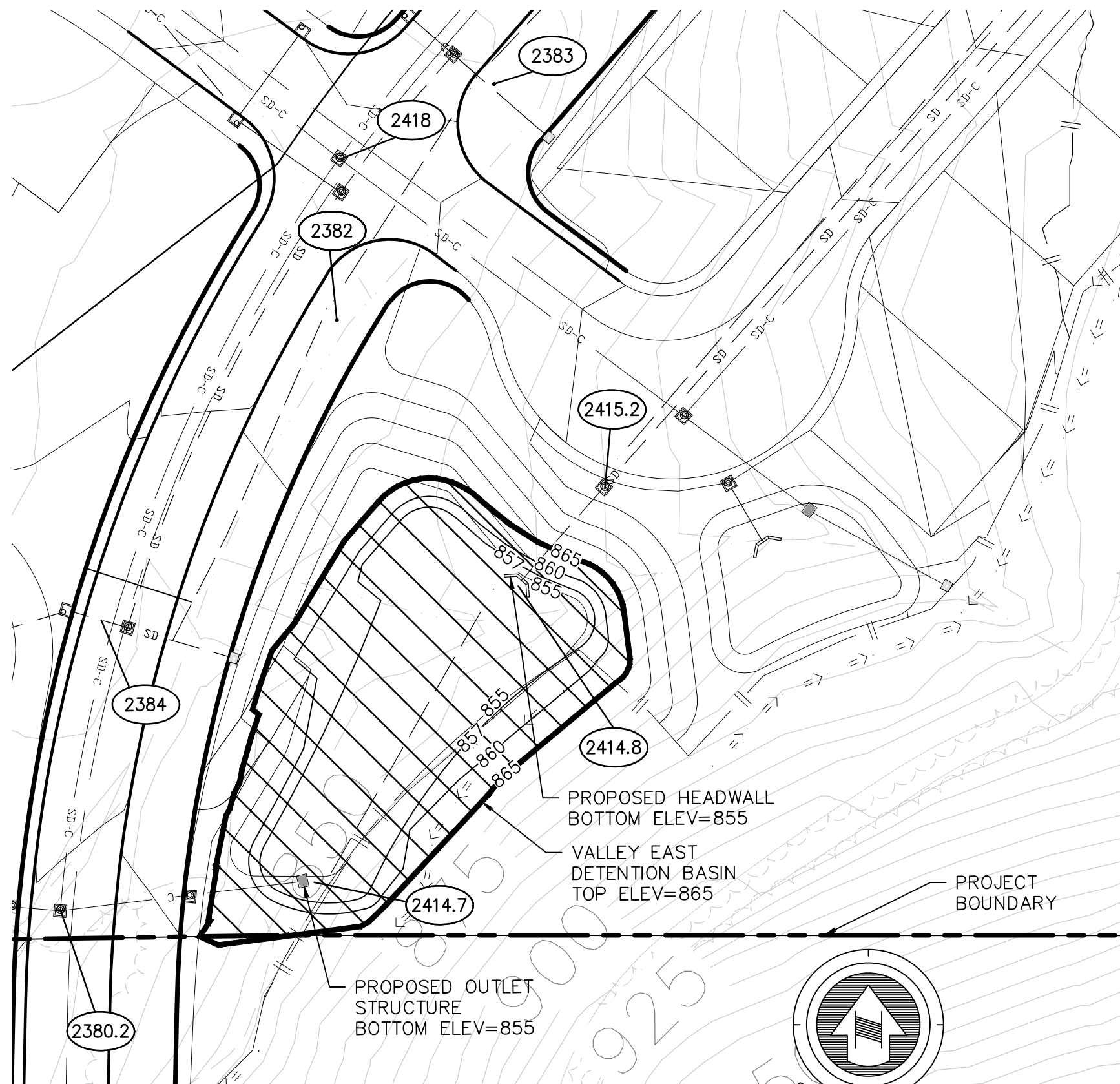
PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN B - PROPOSED DETENTION 25W (BMP V11VR2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
831	0	21405	0.49	0.000
835	4	26225	0.60	2.187



NEWLAND SIERRA
BASIN B - PROPOSED DETENTION BASINS
VALLEY WEST BASIN
DETENTION 25W (BMP V11VR2)

PROJECT: 1669 NEWLAND COMMUNITIES 1002-02 NEWLAND SIERRA VALLEY WEST WATER TREATMENT BASIN EXHIBITS BASIN B PROPOSED DETENTION BASIN. PLOTTED BY: Greg Armstrong



CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN B - PROPOSED DETENTION 25E (BMP V14)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
857	0	9602	0.22	0.000
860	3	12965	0.30	0.777
865	8	18535	0.43	2.584

**NEWLAND SIERRA
BASIN B - PROPOSED DETENTION BASINS
VALLEY EAST BASIN
DETENTION 25E (BMP V14)**

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 26

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2681	2676	3	1362	1359	80						
2676	2676	1						1 of 2			
2680	2679	2	1447	1443	75	0.52	0.13				
2679	2678	6	1443	1369.5	730	0.52	1.38	One side			
2678	2677	3	1365	1364	40						
2677	2676	3	1364	1359	50						
2676	2676	1						2 of 2			
2676	2672	3	1359	1323	320						
2672	2672	1						1 of 2			
2675	2674	2	1427	1420	75	0.35	0.05				
2674	2673	5	1420	1330	440						
2674	2673	8				0.35	2.36				
2673	2672	3	1324	1323	20						
2672	2672	1						2 of 2			
2672	2651	3	1323	1309	250						
2651	2651	10						Save to bank 1			
2671	2670	2	1445	1420	100	0.25	0.27				
2670	2669	5	1420	1385	280						
2670	2669	8				0.29	4.07				
2669	2668	3	1379	1375	415						
2668	2663	5	1375	1348	600						
2663	2663	1						1 of 3			
2667	2666	2	1420	1405	100	0.35	0.19				
2666	2663	5	1405	1348	680						
2666	2663	8				0.35	2.98				
2663	2663	1						2 of 3			
2665.5	2665	2	1363	1361	80	0.45	0.25				
2665	2664	6	1361	1350	550	0.46	4.22	Two sides			
2664	2663	3	1344	1342	110						
2663	2663	1						3 of 3			
2663	2657	3	1342	1312	372						
2657	2657	1						1 of 2			
2662	2661	2	1400	1399	66.67	0.45	0.16				
2661	2660	6	1399	1355	935	0.45	3.60	One side			
2660	2659	3	1349	1348.4	60						

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2659	2658	5	1348.4	1347.6	80	0.25	0.17				
2658	2657	3	1342	1313	540						
2657	2657	1						2 of 2			
2657	2650.6	3	1312	1308	100						
2650.6	2650.6	1						1 of 2			
2650.9	2650.8	2	1356	1354	80	0.45	0.10				
2650.8	2650.7	6	1354	1315	690	0.45	3.79	One side			
2650.7	2650.6	3	1309	1308	75						
2650.6	2650.6	1						2 of 2			
2650.6	2650	3	1308	1298.2	500						
2650	2650	10						Save to bank 2			
2656	2655	2	1390	1389.5	55	0.52	0.15				
2655	2654	6	1389.5	1315	970	0.52	1.50	One side			
2654	2653	3	1309	1305	50						
2653	2652	5	1305	1304.7	30		3.18				
2652	2651	3	1299	1298.5	40						
2651	2651	11						Add bank 1			
2651	2651	12						Clear bank 1			
2651	2650	3	1298.5	1298.2	30						
2650	2650	11						Add bank 2			
2650	2650	12						Clear bank 2			
2650	2635	3	1298.2	1292.5	160						
2635	2635	10						Save to bank 1			
2649	2648	2	1400	1398	80	0.45	0.25				
2648	2647	6	1398	1380	720	0.47	5.78	One side			
2647	2643	3	1374	1361	300						
2643	2643	1						1 of 2			
2646	2645	2	1395	1393	80	0.45	0.08				
2645	2644	6	1393	1368	730	0.45	4.06	Two sides			
2644	2643	3	1362	1361	50						
2643	2643	1						2 of 2			
2643	2640	3	1361	1356	200						
2640	2640	1						1 of 2			
2642	2641	2	1378	1376	81.58	0.45	0.22				
2641	2640	6	1376	1362	610	0.47	5.99	Two sides			

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2640	2640	1						2 of 2			
2640	2639	3	1362	1342	210						
2639	2638	3	1342	1314	380						
2638	2637	3	1314	1295	380						
2637	2636	5	1295	1293	200	0.52	1.02				
2636	2635	3	1293	1292.5	20						
2635	2635	11						Add bank 1			
2635	2635	12						Clear bank 1			
2635	2631	3	1292.5	1278.5	195						
2631	2631	1						1 of 2			
2634	2633	2	1435	1405	50	0.35	0.07				
2633	2632	5	1405	1285	540	0.35	4.39				
2632	2631	3	1279	1278.5	50						
2631	2631	1						2 of 2			
2631	2627	3	1278.5	1253	600						
2627	2627	1						1 of 2			
2630	2629	2	1390	1352	100	0.25	0.18				
2629	2628	5	1352	1262	1370	0.25	4.60				
2628	2627	3	1256	1253	125						
2627	2627	1						2 of 2			
2627	2623	3	1253	1197	1335						
2623	2623	1						1 of 2			
2626	2625	2	1330	1280	80	0.25	0.19				
2625	2624	5	1280	1207	440	0.25	4.59				
2624	2623	3	1201	1197	125						
2623	2623	1						2 of 2			
2623	287	3	1196	1185.5	130						
287	287	10						Save to bank 1			
2622	2621	2	1435	1395	100	0.35	0.27				
2621	2620	5	1395	1275	645						
2621	2620	8				0.35	3.37				
2620	2616	3	1261	1231	380						
2616	2616	1						1 of 2			
2619	2618	2	1249	1247.7	65	0.45	0.17				

[illegible]

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
286	285	2	1218	1216	80	0.45	0.13				
285	284	6	1216	1203	380	0.45	2.74	one side			
284	259	3	1197	1195	180						
259	259	10						save to bank 2			
283	282	2	1268	1266	80	0.46	0.23				
282	281	6	1266	1262	220	0.45	2.06	2 sides			
281	280.6	3	1256	1241	270						
280.6	280.6	1						1 of 2			
280.9	280.8	2	1269	1266	80	0.45	0.16				
280.8	280.7	6	1266	1248	300	0.45	0.56	1 side			
280.7	280.6	3	1242	1241	40						
280.6	280.6	1						2 of 2			
280.6	277	3	1241	1238	70						
277	277	1						1 of 2			
280	279	2	1257	1255	80	0.45	0.24				
279	278	6	1255	1244	340	0.45	2.58	2 sides			
278	277	3	1239	1238	50						
277	277	1						2 of 2			
277	275	3	1238	1228	180						
275	275	1						1 of 2			
275.3	275.2	2	1247	1243	80	0.45	0.14				
275.2	275.1	6	1243	1235	165	0.45	0.29	1 side			
275.1	275	3	1229	1228	40						
275	275	1						2 of 2			
275	293.2	3	1228	1218	330						
293.2	293.2	1						1 of 2			
293.8	293.6	2	1236	1234	80	0.45	0.11				
293.6	293.4	6	1234	1224	390	0.45	1.90	1 side			
293.4	293.2	3	1219	1218	40						
293.2	293.2	1						2 of 2			
293.2	264	3	1218	1216	45						
264	264	10						save to bank 3			
272	271	2	1246	1244	80	0.45	0.07				
271	270	6	1244	1233	850	0.45	2.74	2 sides			

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2014 Advanced Engineering Software (aes)
 Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fusco Engineering
 6390 Greenwich Drive
 Suite 200
 San Diego, CA 92122

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * NO DETENTION *
 * *

FILE NAME: P-26.DAT
 TIME/DATE OF STUDY: 10:45 01/15/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 3.500
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES:			MANNING
	(FT)	(FT)		(FT)	WIDTH	LIP	HIKE	FACTOR
==	=====	=====	=====	=====	=====	=====	=====	=====
1	18.0	8.0	0.020/0.020/0.020	0.50	2.00	0.0312	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

 FLOW PROCESS FROM NODE 2695.00 TO NODE 2694.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
 UPSTREAM ELEVATION(FEET) = 1454.00
 DOWNSTREAM ELEVATION(FEET) = 1452.50
 ELEVATION DIFFERENCE(FEET) = 1.50
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.176
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.304

SUBAREA RUNOFF(CFS) = 0.53
 TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2694.00 TO NODE 2693.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1452.50 DOWNSTREAM ELEVATION(FEET) = 1447.00
 STREET LENGTH(FEET) = 250.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.30
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.78
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.71
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.63
 STREET FLOW TRAVEL TIME(MIN.) = 1.54 Tc(MIN.) = 8.72
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.444
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 0.46 SUBAREA RUNOFF(CFS) = 1.54
 TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 2.01

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 7.34
 FLOW VELOCITY(FEET/SEC.) = 2.93 DEPTH*VELOCITY(FT*FT/SEC.) = 0.77
 LONGEST FLOWPATH FROM NODE 2695.00 TO NODE 2693.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2693.00 TO NODE 2692.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1441.00 DOWNSTREAM(FEET) = 1440.00
 FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 4.90
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.01
 PIPE TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 8.97
 LONGEST FLOWPATH FROM NODE 2695.00 TO NODE 2692.00 = 400.00 FEET.

FLOW PROCESS FROM NODE 2692.00 TO NODE 2692.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.97
 RAINFALL INTENSITY(INCH/HR) = 6.32
 TOTAL STREAM AREA(ACRES) = 0.60
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.01

FLOW PROCESS FROM NODE 2691.00 TO NODE 2690.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
 UPSTREAM ELEVATION(FEET) = 1464.00
 DOWNSTREAM ELEVATION(FEET) = 1461.00
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.936
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.467
 SUBAREA RUNOFF(CFS) = 0.89
 TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 0.89

FLOW PROCESS FROM NODE 2690.00 TO NODE 2692.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1461.00 DOWNSTREAM ELEVATION(FEET) = 1448.00
 STREET LENGTH(FEET) = 500.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.90
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.36
 HALFSTREET FLOOD WIDTH(FEET) = 12.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.13
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.50
 STREET FLOW TRAVEL TIME(MIN.) = 2.02 Tc(MIN.) = 8.96
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.332

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 3.63 SUBAREA RUNOFF(CFS) = 11.95
 TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 12.71

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.43 HALFSTREET FLOOD WIDTH(FEET) = 15.84
 FLOW VELOCITY(FEET/SEC.) = 4.78 DEPTH*VELOCITY(FT*FT/SEC.) = 2.07
 LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2692.00 = 595.00 FEET.

FLOW PROCESS FROM NODE 2692.00 TO NODE 2692.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.96
 RAINFALL INTENSITY(INCH/HR) = 6.33
 TOTAL STREAM AREA(ACRES) = 3.86
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.71

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	2.01	8.97	6.325	0.60
2	12.71	8.96	6.332	3.86

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	14.72	8.96	6.332
2	14.71	8.97	6.325

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 14.72 Tc(MIN.) = 8.96
 TOTAL AREA(ACRES) = 4.5
 LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2692.00 = 595.00 FEET.

FLOW PROCESS FROM NODE 2692.00 TO NODE 2689.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1434.00 DOWNSTREAM(FEET) = 1433.60
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.10
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 14.72
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 9.02
 LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2689.00 = 625.00 FEET.

FLOW PROCESS FROM NODE 2689.00 TO NODE 2689.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.02
 RAINFALL INTENSITY(INCH/HR) = 6.30
 TOTAL STREAM AREA(ACRES) = 4.46
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 14.72

FLOW PROCESS FROM NODE 2696.00 TO NODE 2695.50 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(Feet) = 80.00
 UPSTREAM ELEVATION(Feet) = 1464.00
 DOWNSTREAM ELEVATION(Feet) = 1461.00
 ELEVATION DIFFERENCE(Feet) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(Min.) = 7.772
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.938
 SUBAREA RUNOFF(CFS) = 1.04
 TOTAL AREA(ACRES) = 0.43 TOTAL RUNOFF(CFS) = 1.04

 FLOW PROCESS FROM NODE 2695.50 TO NODE 2689.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

 ELEVATION DATA: UPSTREAM(Feet) = 1458.00 DOWNSTREAM(Feet) = 1433.60
 FLOW LENGTH(Feet) = 600.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.8 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 5.99
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.04
 PIPE TRAVEL TIME(Min.) = 1.67 Tc(Min.) = 9.44
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2689.00 = 680.00 FEET.

 FLOW PROCESS FROM NODE 2689.00 TO NODE 2689.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

 TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(Min.) = 9.44
 RAINFALL INTENSITY(INCH/HR) = 6.12
 TOTAL STREAM AREA(ACRES) = 0.43
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.04

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	14.72	9.02	6.304	4.46
2	1.04	9.44	6.120	0.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (Min.)	INTENSITY (INCH/HOUR)
1	15.71	9.02	6.304
2	15.33	9.44	6.120

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 15.71 Tc(Min.) = 9.02
 TOTAL AREA(ACRES) = 4.9
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2689.00 = 680.00 FEET.

 FLOW PROCESS FROM NODE 2689.00 TO NODE 2688.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1433.60 DOWNSTREAM(FEET) = 1363.00
 FLOW LENGTH(FEET) = 975.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.77
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 15.71
 PIPE TRAVEL TIME(MIN.) = 1.03 Tc(MIN.) = 10.05
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2688.00 = 1655.00 FEET.

 FLOW PROCESS FROM NODE 2688.00 TO NODE 2688.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.05
 RAINFALL INTENSITY(INCH/HR) = 5.88
 TOTAL STREAM AREA(ACRES) = 4.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.71

 FLOW PROCESS FROM NODE 2699.00 TO NODE 2698.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
 UPSTREAM ELEVATION(FEET) = 1605.00
 DOWNSTREAM ELEVATION(FEET) = 1590.00
 ELEVATION DIFFERENCE(FEET) = 15.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.778
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.401
 SUBAREA RUNOFF(CFS) = 0.68
 TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 0.68

 FLOW PROCESS FROM NODE 2698.00 TO NODE 2697.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1590.00 DOWNSTREAM(FEET) = 1494.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 475.00 CHANNEL SLOPE = 0.2021
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1611 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.68
 FLOW VELOCITY(FEET/SEC) = 2.25 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.52 Tc(MIN.) = 9.30
 LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2697.00 = 560.00 FEET.

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FLOW PROCESS FROM NODE 2698.00 TO NODE 2697.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.180

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 1.66 SUBAREA RUNOFF(CFS) = 3.59

TOTAL AREA(ACRES) = 1.9 TOTAL RUNOFF(CFS) = 4.09

TC(MIN.) = 9.30

FLOW PROCESS FROM NODE 2697.00 TO NODE 2690.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1494.00 DOWNSTREAM(FEET) = 1375.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 515.00 CHANNEL SLOPE = 0.2311

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1737 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 4.09

FLOW VELOCITY(FEET/SEC) = 3.73 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 2.30 Tc(MIN.) = 11.60

LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2690.00 = 1075.00 FEET.

FLOW PROCESS FROM NODE 2697.00 TO NODE 2690.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.358

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 6.14 SUBAREA RUNOFF(CFS) = 11.52

TOTAL AREA(ACRES) = 8.0 TOTAL RUNOFF(CFS) = 15.06

TC(MIN.) = 11.60

FLOW PROCESS FROM NODE 2690.00 TO NODE 2688.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1369.00 DOWNSTREAM(FEET) = 1363.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.3 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 18.86

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 15.06

PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 11.65

LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2688.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2688.00 TO NODE 2688.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.65
RAINFALL INTENSITY(INCH/HR) = 5.35
TOTAL STREAM AREA(ACRES) = 8.03
PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.06

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	15.71	10.05	5.879	4.89
2	15.06	11.65	5.345	8.03

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	28.71	10.05	5.879
2	29.35	11.65	5.345

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 29.35   Tc(MIN.) = 11.65
TOTAL AREA(ACRES) = 12.9
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2688.00 = 1655.00 FEET.

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FLOW PROCESS FROM NODE 2688.00 TO NODE 2681.00 IS CODE = 31
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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

```

=====
ELEVATION DATA: UPSTREAM(Feet) = 1363.00 DOWNSTREAM(Feet) = 1362.00
FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 19.0 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 11.01
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 29.35
PIPE TRAVEL TIME(MIN.) = 0.08   Tc(MIN.) = 11.72
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2681.00 = 1705.00 FEET.

```

```

FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 10
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>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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FLOW PROCESS FROM NODE 2687.00 TO NODE 2686.00 IS CODE = 21
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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 80.00
UPSTREAM ELEVATION(Feet) = 1411.00
DOWNSTREAM ELEVATION(Feet) = 1409.00
ELEVATION DIFFERENCE(Feet) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974

```

SUBAREA RUNOFF(CFS) = 0.63
 TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 0.63

FLOW PROCESS FROM NODE 2686.00 TO NODE 2685.50 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1409.00 DOWNSTREAM ELEVATION(FEET) = 1390.00
 STREET LENGTH(FEET) = 415.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.44
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.31
 HALFSTREET FLOOD WIDTH(FEET) = 9.84
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.87
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.52
 STREET FLOW TRAVEL TIME(MIN.) = 1.42 Tc(MIN.) = 9.13
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.253
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.516
 SUBAREA AREA(ACRES) = 2.96 SUBAREA RUNOFF(CFS) = 9.62
 TOTAL AREA(ACRES) = 3.2 PEAK FLOW RATE(CFS) = 10.19

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 12.91
 FLOW VELOCITY(FEET/SEC.) = 5.62 DEPTH*VELOCITY(FT*FT/SEC.) = 2.10
 LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2685.50 = 495.00 FEET.

FLOW PROCESS FROM NODE 2685.50 TO NODE 2685.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1384.00 DOWNSTREAM(FEET) = 1380.00
 FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.71
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.19
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 9.20
 LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2685.00 = 555.00 FEET.

FLOW PROCESS FROM NODE 2685.00 TO NODE 2682.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1380.00 DOWNSTREAM(FEET) = 1379.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 85.00 CHANNEL SLOPE = 0.0118
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.046

```

*USER SPECIFIED(SUBAREA):

```

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 10.45
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.40
AVERAGE FLOW DEPTH(FEET) = 0.70 TRAVEL TIME(MIN.) = 0.42
Tc(MIN.) = 9.62
SUBAREA AREA(ACRES) = 0.25 SUBAREA RUNOFF(CFS) = 0.53
AREA-AVERAGE RUNOFF COEFFICIENT = 0.503
TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 10.38

```

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

```

DEPTH(FEET) = 0.70 FLOW VELOCITY(FEET/SEC.) = 3.39
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2682.00 = 640.00 FEET.

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FLOW PROCESS FROM NODE 2682.00 TO NODE 2682.00 IS CODE = 1

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.62
RAINFALL INTENSITY(INCH/HR) = 6.05
TOTAL STREAM AREA(ACRES) = 3.41
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.38

```

```

FLOW PROCESS FROM NODE 2684.00 TO NODE 2683.00 IS CODE = 21

```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

```

=====
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1467.00
DOWNSTREAM ELEVATION(FEET) = 1423.00
ELEVATION DIFFERENCE(FEET) = 44.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 1.26
TOTAL AREA(ACRES) = 0.45 TOTAL RUNOFF(CFS) = 1.26

```

```

FLOW PROCESS FROM NODE 2683.00 TO NODE 2682.00 IS CODE = 31

```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1417.00 DOWNSTREAM(FEET) = 1373.00
FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 1.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 14.13
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

```

PIPE-FLOW(CFS) = 1.26
 PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 6.40
 LONGEST FLOWPATH FROM NODE 2684.00 TO NODE 2682.00 = 210.00 FEET.

FLOW PROCESS FROM NODE 2682.00 TO NODE 2682.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 6.40
 RAINFALL INTENSITY(INCH/HR) = 7.87
 TOTAL STREAM AREA(ACRES) = 0.45
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.26

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.38	9.62	6.046	3.41
2	1.26	6.40	7.867	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.16	6.40	7.867
2	11.34	9.62	6.046

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 11.34 Tc(MIN.) = 9.62
 TOTAL AREA(ACRES) = 3.9
 LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2682.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 2682.00 TO NODE 2681.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1373.00 DOWNSTREAM(FEET) = 1362.00
 FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.93
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 11.34
 PIPE TRAVEL TIME(MIN.) = 0.70 Tc(MIN.) = 10.32
 LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2681.00 = 1055.00 FEET.

FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.34	10.32	5.779	3.86

LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2681.00 = 1055.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	29.35	11.72	5.323	12.92

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2681.00 = 1705.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.18	10.32	5.779
2	39.79	11.72	5.323

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 39.79 Tc(MIN.) = 11.72
 TOTAL AREA(ACRES) = 16.8

 FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 12

 >>>>CLEAR MEMORY BANK # 1 <<<<
 =====

 FLOW PROCESS FROM NODE 2681.00 TO NODE 2676.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1362.00 DOWNSTREAM(FEET) = 1359.00
 FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.06
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 39.79
 PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 11.81
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2676.00 = 1785.00 FEET.

 FLOW PROCESS FROM NODE 2676.00 TO NODE 2676.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.81
 RAINFALL INTENSITY(INCH/HR) = 5.30
 TOTAL STREAM AREA(ACRES) = 16.78
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 39.79

 FLOW PROCESS FROM NODE 2680.00 TO NODE 2679.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
 UPSTREAM ELEVATION(FEET) = 1447.00
 DOWNSTREAM ELEVATION(FEET) = 1443.00
 ELEVATION DIFFERENCE(FEET) = 4.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.175

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.019
SUBAREA RUNOFF(CFS) = 0.61
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.61

FLOW PROCESS FROM NODE 2679.00 TO NODE 2678.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1443.00 DOWNSTREAM ELEVATION(FEET) = 1369.50
STREET LENGTH(FEET) = 730.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.24
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 6.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.97
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.44
STREET FLOW TRAVEL TIME(MIN.) = 2.04 Tc(MIN.) = 7.21
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.281

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 1.38 SUBAREA RUNOFF(CFS) = 5.22
TOTAL AREA(ACRES) = 1.5 PEAK FLOW RATE(CFS) = 5.72

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.28 HALFSTREET FLOOD WIDTH(FEET) = 8.41
FLOW VELOCITY(FEET/SEC.) = 6.69 DEPTH*VELOCITY(FT*FT/SEC.) = 1.90
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2678.00 = 805.00 FEET.

FLOW PROCESS FROM NODE 2678.00 TO NODE 2677.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1365.00 DOWNSTREAM(FEET) = 1364.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.21
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.72
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 7.29
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2677.00 = 845.00 FEET.

FLOW PROCESS FROM NODE 2677.00 TO NODE 2676.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1364.00 DOWNSTREAM(FEET) = 1359.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.54
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.72
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 7.36
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2676.00 = 895.00 FEET.

```

```

FLOW PROCESS FROM NODE 2676.00 TO NODE 2676.00 IS CODE = 1
-----

```

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.36
RAINFALL INTENSITY(INCH/HR) = 7.19
TOTAL STREAM AREA(ACRES) = 1.51
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.72

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	39.79	11.81	5.297	16.78
2	5.72	7.36	7.189	1.51

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.50	7.36	7.189
2	44.01	11.81	5.297

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 44.01 Tc(MIN.) = 11.81
TOTAL AREA(ACRES) = 18.3
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2676.00 = 1785.00 FEET.

```

```

FLOW PROCESS FROM NODE 2676.00 TO NODE 2672.00 IS CODE = 31
-----

```

```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1359.00 DOWNSTREAM(FEET) = 1323.00
FLOW LENGTH(FEET) = 320.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 23.62
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 44.01
PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 12.04
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2672.00 = 2105.00 FEET.

```

```

FLOW PROCESS FROM NODE 2672.00 TO NODE 2672.00 IS CODE = 1
-----

```

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.04
RAINFALL INTENSITY(INCH/HR) = 5.23
TOTAL STREAM AREA(ACRES) = 18.29
PEAK FLOW RATE(CFS) AT CONFLUENCE = 44.01
```

```
*****
FLOW PROCESS FROM NODE 2675.00 TO NODE 2674.00 IS CODE = 21
-----
```

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

```
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1427.00
DOWNSTREAM ELEVATION(FEET) = 1420.00
ELEVATION DIFFERENCE(FEET) = 7.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.553
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.618
SUBAREA RUNOFF(CFS) = 0.15
TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.15
```

```
*****
FLOW PROCESS FROM NODE 2674.00 TO NODE 2673.00 IS CODE = 53
-----
```

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1420.00 DOWNSTREAM(FEET) = 1330.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 440.00 CHANNEL SLOPE = 0.2045
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1623 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.15
FLOW VELOCITY(FEET/SEC) = 2.26 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.25 Tc(MIN.) = 8.80
LONGEST FLOWPATH FROM NODE 2675.00 TO NODE 2673.00 = 515.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2674.00 TO NODE 2673.00 IS CODE = 81
-----
```

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

```
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.402
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 2.36 SUBAREA RUNOFF(CFS) = 5.29
TOTAL AREA(ACRES) = 2.4 TOTAL RUNOFF(CFS) = 5.40
TC(MIN.) = 8.80
```

```
*****
FLOW PROCESS FROM NODE 2673.00 TO NODE 2672.00 IS CODE = 31
-----
```

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1324.00 DOWNSTREAM(FEET) = 1323.00
```

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FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 10.39
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.40
 PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 8.84
 LONGEST FLOWPATH FROM NODE 2675.00 TO NODE 2672.00 = 535.00 FEET.

FLOW PROCESS FROM NODE 2672.00 TO NODE 2672.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.84
 RAINFALL INTENSITY(INCH/HR) = 6.39
 TOTAL STREAM AREA(ACRES) = 2.41
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.40

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	44.01	12.04	5.233	18.29
2	5.40	8.84	6.387	2.41

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	41.45	8.84	6.387
2	48.43	12.04	5.233

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 48.43 Tc(MIN.) = 12.04
 TOTAL AREA(ACRES) = 20.7
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2672.00 = 2105.00 FEET.

FLOW PROCESS FROM NODE 2672.00 TO NODE 2651.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1323.00 DOWNSTREAM(FEET) = 1309.00
 FLOW LENGTH(FEET) = 250.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 18.40
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 48.43
 PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 12.26
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2651.00 = 2355.00 FEET.

FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

=====

 FLOW PROCESS FROM NODE 2671.00 TO NODE 2670.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1445.00
 DOWNSTREAM ELEVATION(FEET) = 1420.00
 ELEVATION DIFFERENCE(FEET) = 25.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
 SUBAREA RUNOFF(CFS) = 0.50
 TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.50

 FLOW PROCESS FROM NODE 2670.00 TO NODE 2669.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1420.00 DOWNSTREAM(FEET) = 1385.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 280.00 CHANNEL SLOPE = 0.1250
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1183 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.50
 FLOW VELOCITY(FEET/SEC) = 1.93 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 2.42 Tc(MIN.) = 9.52
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2669.00 = 380.00 FEET.

 FLOW PROCESS FROM NODE 2670.00 TO NODE 2669.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.085
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2900
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2875
 SUBAREA AREA(ACRES) = 4.07 SUBAREA RUNOFF(CFS) = 7.18
 TOTAL AREA(ACRES) = 4.3 TOTAL RUNOFF(CFS) = 7.59
 TC(MIN.) = 9.52

 FLOW PROCESS FROM NODE 2669.00 TO NODE 2668.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1379.00 DOWNSTREAM(FEET) = 1375.00
 FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.12
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.59
 PIPE TRAVEL TIME(MIN.) = 1.13 Tc(MIN.) = 10.66
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2668.00 = 795.00 FEET.

 FLOW PROCESS FROM NODE 2668.00 TO NODE 2663.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1375.00	DOWNSTREAM(FEET) =	1348.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	600.00	CHANNEL SLOPE =	0.0450
CHANNEL FLOW THRU SUBAREA(CFS) =	7.59		
FLOW VELOCITY(FEET/SEC) =	4.95	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
TRAVEL TIME(MIN.) =	2.02	Tc(MIN.) =	12.68
LONGEST FLOWPATH FROM NODE	2671.00	TO NODE	2663.00 = 1395.00 FEET.

 FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS =	3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	12.68
RAINFALL INTENSITY(INCH/HR) =	5.06
TOTAL STREAM AREA(ACRES) =	4.34
PEAK FLOW RATE(CFS) AT CONFLUENCE =	7.59

 FLOW PROCESS FROM NODE 2667.00 TO NODE 2666.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.3500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	100.00
UPSTREAM ELEVATION(FEET) =	1420.00
DOWNSTREAM ELEVATION(FEET) =	1405.00
ELEVATION DIFFERENCE(FEET) =	15.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!	
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	7.972
SUBAREA RUNOFF(CFS) =	0.53
TOTAL AREA(ACRES) =	0.19
TOTAL RUNOFF(CFS) =	0.53

 FLOW PROCESS FROM NODE 2666.00 TO NODE 2663.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1405.00	DOWNSTREAM(FEET) =	1348.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	680.00	CHANNEL SLOPE =	0.0838
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.0838	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION			
CHANNEL FLOW THRU SUBAREA(CFS) =	0.53		
FLOW VELOCITY(FEET/SEC) =	1.62	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
TRAVEL TIME(MIN.) =	6.99	Tc(MIN.) =	13.26
LONGEST FLOWPATH FROM NODE	2667.00	TO NODE	2663.00 = 780.00 FEET.

 FLOW PROCESS FROM NODE 2666.00 TO NODE 2663.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

```

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.917
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 2.98 SUBAREA RUNOFF(CFS) = 5.13
TOTAL AREA(ACRES) = 3.2 TOTAL RUNOFF(CFS) = 5.46
TC(MIN.) = 13.26
*****
FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 13.26
RAINFALL INTENSITY(INCH/HR) = 4.92
TOTAL STREAM AREA(ACRES) = 3.17
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.46
*****
FLOW PROCESS FROM NODE 2665.50 TO NODE 2665.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1363.00
DOWNSTREAM ELEVATION(FEET) = 1361.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.78
TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.78
*****
FLOW PROCESS FROM NODE 2665.00 TO NODE 2664.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1361.00 DOWNSTREAM ELEVATION(FEET) = 1350.00
STREET LENGTH(FEET) = 550.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.32
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 9.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.13

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PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.95
 STREET FLOW TRAVEL TIME(MIN.) = 2.93 Tc(MIN.) = 10.64
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.666
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4600
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.459
 SUBAREA AREA(ACRES) = 4.22 SUBAREA RUNOFF(CFS) = 11.00
 TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 11.64

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 12.16
 FLOW VELOCITY(FEET/SEC.) = 3.58 DEPTH*VELOCITY(FT*FT/SEC.) = 1.29
 LONGEST FLOWPATH FROM NODE 2665.50 TO NODE 2664.00 = 630.00 FEET.

 FLOW PROCESS FROM NODE 2664.00 TO NODE 2663.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1344.00 DOWNSTREAM(FEET) = 1342.00
 FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.56
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 11.64
 PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 10.85
 LONGEST FLOWPATH FROM NODE 2665.50 TO NODE 2663.00 = 740.00 FEET.

 FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.85
 RAINFALL INTENSITY(INCH/HR) = 5.59
 TOTAL STREAM AREA(ACRES) = 4.47
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.64

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.59	12.68	5.061	4.34
2	5.46	13.26	4.917	3.17
3	11.64	10.85	5.594	4.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.60	10.85	5.594
2	23.34	12.68	5.061
3	23.06	13.26	4.917

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 23.34 Tc(MIN.) = 12.68
 TOTAL AREA(ACRES) = 12.0

LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2663.00 = 1395.00 FEET.

FLOW PROCESS FROM NODE 2663.00 TO NODE 2657.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1312.00

FLOW LENGTH(FEET) = 372.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 17.89

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 23.34

PIPE TRAVEL TIME(MIN.) = 0.35 Tc(MIN.) = 13.02

LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2657.00 = 1767.00 FEET.

FLOW PROCESS FROM NODE 2657.00 TO NODE 2657.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 13.02

RAINFALL INTENSITY(INCH/HR) = 4.97

TOTAL STREAM AREA(ACRES) = 11.98

PEAK FLOW RATE(CFS) AT CONFLUENCE = 23.34

FLOW PROCESS FROM NODE 2662.00 TO NODE 2661.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 66.67

UPSTREAM ELEVATION(FEET) = 1400.00

DOWNSTREAM ELEVATION(FEET) = 1399.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.346

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.627

SUBAREA RUNOFF(CFS) = 0.48

TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.48

FLOW PROCESS FROM NODE 2661.00 TO NODE 2660.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1399.00 DOWNSTREAM ELEVATION(FEET) = 1355.00

STREET LENGTH(FEET) = 935.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

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Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.85
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 9.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.81
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.45
STREET FLOW TRAVEL TIME(MIN.) = 3.24 Tc(MIN.) = 11.59
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.363
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 3.60 SUBAREA RUNOFF(CFS) = 8.69
TOTAL AREA(ACRES) = 3.8 PEAK FLOW RATE(CFS) = 9.07

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 12.22
FLOW VELOCITY(FEET/SEC.) = 5.53 DEPTH*VELOCITY(FT*FT/SEC.) = 1.99
LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2660.00 = 1001.67 FEET.

FLOW PROCESS FROM NODE 2660.00 TO NODE 2659.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1349.00 DOWNSTREAM(FEET) = 1348.40
FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.39
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 9.07
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 11.74
LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2659.00 = 1061.67 FEET.

FLOW PROCESS FROM NODE 2659.00 TO NODE 2658.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1348.40 DOWNSTREAM(FEET) = 1347.60
CHANNEL LENGTH THRU SUBAREA(FEET) = 80.00 CHANNEL SLOPE = 0.0100
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.194
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 9.18
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.09
AVERAGE FLOW DEPTH(FEET) = 0.68 TRAVEL TIME(MIN.) = 0.43
Tc(MIN.) = 12.17
SUBAREA AREA(ACRES) = 0.17 SUBAREA RUNOFF(CFS) = 0.22
AREA-AVERAGE RUNOFF COEFFICIENT = 0.441
TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 9.07

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.68 FLOW VELOCITY(FEET/SEC.) = 3.08
LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2658.00 = 1141.67 FEET.

 FLOW PROCESS FROM NODE 2658.00 TO NODE 2657.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1313.00
 FLOW LENGTH(FEET) = 540.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.29
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 9.07
 PIPE TRAVEL TIME(MIN.) = 0.73 Tc(MIN.) = 12.91
 LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2657.00 = 1681.67 FEET.

 FLOW PROCESS FROM NODE 2657.00 TO NODE 2657.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.91
 RAINFALL INTENSITY(INCH/HR) = 5.00
 TOTAL STREAM AREA(ACRES) = 3.93
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.07

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	23.34	13.02	4.973	11.98
2	9.07	12.91	5.002	3.93

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.28	12.91	5.002
2	32.36	13.02	4.973

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 32.36 Tc(MIN.) = 13.02
 TOTAL AREA(ACRES) = 15.9
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2657.00 = 1767.00 FEET.

 FLOW PROCESS FROM NODE 2657.00 TO NODE 2650.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1312.00 DOWNSTREAM(FEET) = 1308.00
 FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.01
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 32.36
 PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 13.13
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.60 = 1867.00 FEET.

 FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 13.13
 RAINFALL INTENSITY(INCH/HR) = 4.95
 TOTAL STREAM AREA(ACRES) = 15.91
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 32.36

 FLOW PROCESS FROM NODE 2650.90 TO NODE 2650.80 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1356.00
 DOWNSTREAM ELEVATION(FEET) = 1354.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.31
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.31

 FLOW PROCESS FROM NODE 2650.80 TO NODE 2650.70 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1354.00 DOWNSTREAM ELEVATION(FEET) = 1315.00
 STREET LENGTH(FEET) = 690.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.40
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.30
 HALFSTREET FLOOD WIDTH(FEET) = 9.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.29
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.60
 STREET FLOW TRAVEL TIME(MIN.) = 2.17 Tc(MIN.) = 9.88
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.941

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 3.79 SUBAREA RUNOFF(CFS) = 10.13
 TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 10.40

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 12.47
 FLOW VELOCITY(FEET/SEC.) = 6.11 DEPTH*VELOCITY(FT*FT/SEC.) = 2.23
 LONGEST FLOWPATH FROM NODE 2650.90 TO NODE 2650.70 = 770.00 FEET.

FLOW PROCESS FROM NODE 2650.70 TO NODE 2650.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1309.00 DOWNSTREAM(FEET) = 1308.00
 FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.38
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.40
 PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 10.05
 LONGEST FLOWPATH FROM NODE 2650.90 TO NODE 2650.60 = 845.00 FEET.

FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.05
 RAINFALL INTENSITY(INCH/HR) = 5.88
 TOTAL STREAM AREA(ACRES) = 3.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.40

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	32.36	13.13	4.946	15.91
2	10.40	10.05	5.877	3.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.64	10.05	5.877
2	41.11	13.13	4.946

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 41.11 Tc(MIN.) = 13.13
 TOTAL AREA(ACRES) = 19.8
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.60 = 1867.00 FEET.

FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1308.00 DOWNSTREAM(FEET) = 1298.20
 FLOW LENGTH(FEET) = 500.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 22.1 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 11.79
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 41.11
 PIPE TRAVEL TIME(MIN.) = 0.71 Tc(MIN.) = 13.84
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.00 = 2367.00 FEET.

FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 10

 >>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2656.00 TO NODE 2655.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 55.00
 UPSTREAM ELEVATION(FEET) = 1390.00
 DOWNSTREAM ELEVATION(FEET) = 1389.50
 ELEVATION DIFFERENCE(FEET) = 0.50
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.992
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.814
 SUBAREA RUNOFF(CFS) = 0.53
 TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2655.00 TO NODE 2654.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1389.50 DOWNSTREAM ELEVATION(FEET) = 1315.00
 STREET LENGTH(FEET) = 970.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.69
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.24
 HALFSTREET FLOOD WIDTH(FEET) = 6.09
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.19
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.23
 STREET FLOW TRAVEL TIME(MIN.) = 3.12 Tc(MIN.) = 11.11
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.510

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 1.50 SUBAREA RUNOFF(CFS) = 4.30
 TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 4.73

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.28 HALFSTREET FLOOD WIDTH(Feet) = 8.22
 FLOW VELOCITY(Feet/Sec.) = 5.74 DEPTH*VELOCITY(FT*FT/SEC.) = 1.61
 LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2654.00 = 1025.00 FEET.

FLOW PROCESS FROM NODE 2654.00 TO NODE 2653.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1309.00 DOWNSTREAM(Feet) = 1305.00
 FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.0 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 11.84
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 4.73
 PIPE TRAVEL TIME(Min.) = 0.07 Tc(Min.) = 11.18
 LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2653.00 = 1075.00 FEET.

FLOW PROCESS FROM NODE 2653.00 TO NODE 2652.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1305.00 DOWNSTREAM(Feet) = 1304.70
 CHANNEL LENGTH THRU SUBAREA(Feet) = 30.00 CHANNEL SLOPE = 0.0100
 CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.434
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.75
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 2.93
 AVERAGE FLOW DEPTH(Feet) = 0.62 TRAVEL TIME(Min.) = 0.17
 Tc(Min.) = 11.35
 SUBAREA AREA(ACRES) = 3.18 SUBAREA RUNOFF(CFS) = 6.05
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.408
 TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 10.71

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 0.74 FLOW VELOCITY(Feet/Sec.) = 3.21
 LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2652.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 2652.00 TO NODE 2651.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1299.00 DOWNSTREAM(Feet) = 1298.50
 FLOW LENGTH(Feet) = 40.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.2 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 7.18
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.71
 PIPE TRAVEL TIME(Min.) = 0.09 Tc(Min.) = 11.44
 LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2651.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.71	11.44	5.406	4.83

LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2651.00 = 1145.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	48.43	12.26	5.170	20.70

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2651.00 = 2355.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	55.91	11.44	5.406
2	58.68	12.26	5.170

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 58.68 Tc(MIN.) = 12.26
TOTAL AREA(ACRES) = 25.5

FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 2651.00 TO NODE 2650.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1298.50 DOWNSTREAM(FEET) = 1298.20
FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 27.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.17
ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 58.68
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 12.31
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2650.00 = 2385.00 FEET.

FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	58.68	12.31	5.157	25.53

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2650.00 = 2385.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)

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1 41.11 13.84 4.782 19.80
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.00 = 2367.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	95.25	12.31	5.157
2	95.52	13.84	4.782

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 95.52 Tc(MIN.) = 13.84
 TOTAL AREA(ACRES) = 45.3

FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2650.00 TO NODE 2635.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1298.20 DOWNSTREAM(FEET) = 1292.50
 FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 36.0 INCH PIPE IS 24.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 18.77
 ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 95.52
 PIPE TRAVEL TIME(MIN.) = 0.14 Tc(MIN.) = 13.98
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2635.00 = 2545.00 FEET.

FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2649.00 TO NODE 2648.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1400.00
 DOWNSTREAM ELEVATION(FEET) = 1398.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.78
 TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.78

FLOW PROCESS FROM NODE 2648.00 TO NODE 2647.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

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UPSTREAM ELEVATION(FEET) = 1398.00 DOWNSTREAM ELEVATION(FEET) = 1380.00
STREET LENGTH(FEET) = 720.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.59
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.39
HALFSTREET FLOOD WIDTH(FEET) = 13.66
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.27
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.66
STREET FLOW TRAVEL TIME(MIN.) = 2.81 Tc(MIN.) = 10.52
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.706
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.469
SUBAREA AREA(ACRES) = 5.78 SUBAREA RUNOFF(CFS) = 15.50
TOTAL AREA(ACRES) = 6.0 PEAK FLOW RATE(CFS) = 16.14

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.47 HALFSTREET FLOOD WIDTH(FEET) = 17.59
FLOW VELOCITY(FEET/SEC.) = 4.98 DEPTH*VELOCITY(FT*FT/SEC.) = 2.33
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2647.00 = 800.00 FEET.

FLOW PROCESS FROM NODE 2647.00 TO NODE 2643.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1374.00 DOWNSTREAM(FEET) = 1361.00
FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.97
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 16.14
PIPE TRAVEL TIME(MIN.) = 0.39 Tc(MIN.) = 10.91
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2643.00 = 1100.00 FEET.

FLOW PROCESS FROM NODE 2643.00 TO NODE 2643.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.91
RAINFALL INTENSITY(INCH/HR) = 5.58
TOTAL STREAM AREA(ACRES) = 6.03
PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.14

FLOW PROCESS FROM NODE 2646.00 TO NODE 2645.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1395.00
 DOWNSTREAM ELEVATION(FEET) = 1393.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.25
 TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.25

 FLOW PROCESS FROM NODE 2645.00 TO NODE 2644.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<

 UPSTREAM ELEVATION(FEET) = 1393.00 DOWNSTREAM ELEVATION(FEET) = 1368.00
 STREET LENGTH(FEET) = 730.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.36
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27
 HALFSTREET FLOOD WIDTH(FEET) = 7.59
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.70
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.99
 STREET FLOW TRAVEL TIME(MIN.) = 3.29 Tc(MIN.) = 11.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.546

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 4.06 SUBAREA RUNOFF(CFS) = 10.13
 TOTAL AREA(ACRES) = 4.1 PEAK FLOW RATE(CFS) = 10.33

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 10.28
 FLOW VELOCITY(FEET/SEC.) = 4.29 DEPTH*VELOCITY(FT*FT/SEC.) = 1.38
 LONGEST FLOWPATH FROM NODE 2646.00 TO NODE 2644.00 = 810.00 FEET.

 FLOW PROCESS FROM NODE 2644.00 TO NODE 2643.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

 ELEVATION DATA: UPSTREAM(FEET) = 1362.00 DOWNSTREAM(FEET) = 1361.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.71

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ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.33
 PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 11.09
 LONGEST FLOWPATH FROM NODE 2646.00 TO NODE 2643.00 = 860.00 FEET.

 FLOW PROCESS FROM NODE 2643.00 TO NODE 2643.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.09
 RAINFALL INTENSITY(INCH/HR) = 5.52
 TOTAL STREAM AREA(ACRES) = 4.14
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.33

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.14	10.91	5.575	6.03
2	10.33	11.09	5.516	4.14

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.31	10.91	5.575
2	26.30	11.09	5.516

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 26.31 Tc(MIN.) = 10.91
 TOTAL AREA(ACRES) = 10.2
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2643.00 = 1100.00 FEET.

 FLOW PROCESS FROM NODE 2643.00 TO NODE 2640.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1361.00 DOWNSTREAM(FEET) = 1356.00
 FLOW LENGTH(FEET) = 200.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.93
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 26.31
 PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 11.19
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2640.00 = 1300.00 FEET.

 FLOW PROCESS FROM NODE 2640.00 TO NODE 2640.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.19
 RAINFALL INTENSITY(INCH/HR) = 5.49
 TOTAL STREAM AREA(ACRES) = 10.17

PEAK FLOW RATE(CFS) AT CONFLUENCE = P-26
26.31

FLOW PROCESS FROM NODE 2642.00 TO NODE 2641.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58
UPSTREAM ELEVATION(FEET) = 1378.00
DOWNSTREAM ELEVATION(FEET) = 1376.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.837
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.901
SUBAREA RUNOFF(CFS) = 0.68
TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 0.68

FLOW PROCESS FROM NODE 2641.00 TO NODE 2640.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1376.00 DOWNSTREAM ELEVATION(FEET) = 1362.00
STREET LENGTH(FEET) = 610.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.67
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.32
HALFSTREET FLOOD WIDTH(FEET) = 10.41
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.52
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.14
STREET FLOW TRAVEL TIME(MIN.) = 2.89 Tc(MIN.) = 10.72
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.637

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.469
SUBAREA AREA(ACRES) = 5.99 SUBAREA RUNOFF(CFS) = 15.87
TOTAL AREA(ACRES) = 6.2 PEAK FLOW RATE(CFS) = 16.43

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.66
FLOW VELOCITY(FEET/SEC.) = 4.08 DEPTH*VELOCITY(FT*FT/SEC.) = 1.59
LONGEST FLOWPATH FROM NODE 2642.00 TO NODE 2640.00 = 691.58 FEET.

FLOW PROCESS FROM NODE 2640.00 TO NODE 2640.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.72
RAINFALL INTENSITY(INCH/HR) = 5.64
TOTAL STREAM AREA(ACRES) = 6.21
PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.43

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.31	11.19	5.485	10.17
2	16.43	10.72	5.637	6.21

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	42.02	10.72	5.637
2	42.29	11.19	5.485

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 42.29 Tc(MIN.) = 11.19
TOTAL AREA(ACRES) = 16.4
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2640.00 = 1300.00 FEET.

```

FLOW PROCESS FROM NODE 2640.00 TO NODE 2639.00 IS CODE = 31

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-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1362.00 DOWNSTREAM(FEET) = 1342.00
FLOW LENGTH(FEET) = 210.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.86
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.29
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 11.35
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2639.00 = 1510.00 FEET.

```

FLOW PROCESS FROM NODE 2639.00 TO NODE 2638.00 IS CODE = 31

```

-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1314.00
FLOW LENGTH(FEET) = 380.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 20.22
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.29
PIPE TRAVEL TIME(MIN.) = 0.31 Tc(MIN.) = 11.66
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2638.00 = 1890.00 FEET.

```

FLOW PROCESS FROM NODE 2638.00 TO NODE 2637.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1314.00 DOWNSTREAM(FEET) = 1295.00
FLOW LENGTH(FEET) = 380.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 17.24
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.29
PIPE TRAVEL TIME(MIN.) = 0.37 Tc(MIN.) = 12.03
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2637.00 = 2270.00 FEET.
*****
FLOW PROCESS FROM NODE 2637.00 TO NODE 2636.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1295.00 DOWNSTREAM(FEET) = 1293.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 200.00 CHANNEL SLOPE = 0.0100
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.047
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 43.63
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.75
AVERAGE FLOW DEPTH(FEET) = 1.52 TRAVEL TIME(MIN.) = 0.70
Tc(MIN.) = 12.73
SUBAREA AREA(ACRES) = 1.02 SUBAREA RUNOFF(CFS) = 2.68
AREA-AVERAGE RUNOFF COEFFICIENT = 0.468
TOTAL AREA(ACRES) = 17.4 PEAK FLOW RATE(CFS) = 42.29

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 1.50 FLOW VELOCITY(FEET/SEC.) = 4.71
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2636.00 = 2470.00 FEET.
*****
FLOW PROCESS FROM NODE 2636.00 TO NODE 2635.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1293.00 DOWNSTREAM(FEET) = 1292.50
FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.24
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 42.29
PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 12.76
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2635.00 = 2490.00 FEET.
*****
FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 11
-----
>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **
STREAM RUNOFF Tc INTENSITY AREA
NUMBER (CFS) (MIN.) (INCH/HOUR) (ACRE)
1 42.29 12.76 5.040 17.40
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2635.00 = 2490.00 FEET.

```

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	95.52	13.98	4.751	45.33

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2635.00 = 2545.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	129.44	12.76	5.040
2	135.38	13.98	4.751

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 135.38 Tc(MIN.) = 13.98
 TOTAL AREA(ACRES) = 62.7

FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2635.00 TO NODE 2631.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1292.50 DOWNSTREAM(Feet) = 1278.50
 FLOW LENGTH(Feet) = 195.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 36.0 INCH PIPE IS 24.3 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 26.64
 ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 135.38
 PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 14.10
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2631.00 = 2740.00 FEET.

FLOW PROCESS FROM NODE 2631.00 TO NODE 2631.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 14.10
 RAINFALL INTENSITY(INCH/HR) = 4.72
 TOTAL STREAM AREA(ACRES) = 62.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 135.38

FLOW PROCESS FROM NODE 2634.00 TO NODE 2633.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(Feet) = 50.00
 UPSTREAM ELEVATION(Feet) = 1435.00
 DOWNSTREAM ELEVATION(Feet) = 1405.00
 ELEVATION DIFFERENCE(Feet) = 30.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.431
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.23
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.23

FLOW PROCESS FROM NODE 2633.00 TO NODE 2632.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1405.00 DOWNSTREAM(FEET) = 1285.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 540.00 CHANNEL SLOPE = 0.2222
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.642
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.89
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 8.19
AVERAGE FLOW DEPTH(FEET) = 0.24 TRAVEL TIME(MIN.) = 1.10
Tc(MIN.) = 5.53
SUBAREA AREA(ACRES) = 4.39 SUBAREA RUNOFF(CFS) = 13.28
AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 13.49

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 FLOW VELOCITY(FEET/SEC.) = 10.22
LONGEST FLOWPATH FROM NODE 2634.00 TO NODE 2632.00 = 590.00 FEET.

FLOW PROCESS FROM NODE 2632.00 TO NODE 2631.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1279.00 DOWNSTREAM(FEET) = 1278.50
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.07
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 13.49
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 5.65
LONGEST FLOWPATH FROM NODE 2634.00 TO NODE 2631.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 2631.00 TO NODE 2631.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 5.65
RAINFALL INTENSITY(INCH/HR) = 8.53
TOTAL STREAM AREA(ACRES) = 4.46
PEAK FLOW RATE(CFS) AT CONFLUENCE = 13.49

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	135.38	14.10	4.724	62.73

2 13.49 5.65 P-26
8.525 4.46

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	67.70	5.65	8.525
2	142.86	14.10	4.724

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 142.86 Tc(MIN.) = 14.10

TOTAL AREA(ACRES) = 67.2

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2631.00 = 2740.00 FEET.

FLOW PROCESS FROM NODE 2631.00 TO NODE 2627.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1278.50 DOWNSTREAM(FEET) = 1253.00
FLOW LENGTH(FEET) = 600.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 39.0 INCH PIPE IS 28.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.98
ESTIMATED PIPE DIAMETER(INCH) = 39.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 142.86
PIPE TRAVEL TIME(MIN.) = 0.45 Tc(MIN.) = 14.56
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2627.00 = 3340.00 FEET.

FLOW PROCESS FROM NODE 2627.00 TO NODE 2627.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.56
RAINFALL INTENSITY(INCH/HR) = 4.63
TOTAL STREAM AREA(ACRES) = 67.19
PEAK FLOW RATE(CFS) AT CONFLUENCE = 142.86

FLOW PROCESS FROM NODE 2630.00 TO NODE 2629.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1390.00
DOWNSTREAM ELEVATION(FEET) = 1352.00
ELEVATION DIFFERENCE(FEET) = 38.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.33
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.33

FLOW PROCESS FROM NODE 2629.00 TO NODE 2628.00 IS CODE = 51

```

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1352.00 DOWNSTREAM(FEET) = 1262.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1370.00 CHANNEL SLOPE = 0.0657
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.131
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.36
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.30
AVERAGE FLOW DEPTH(FEET) = 0.23 TRAVEL TIME(MIN.) = 5.31
Tc(MIN.) = 12.41
SUBAREA AREA(ACRES) = 4.60 SUBAREA RUNOFF(CFS) = 5.90
AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 6.13

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.32 FLOW VELOCITY(FEET/SEC.) = 5.20
LONGEST FLOWPATH FROM NODE 2630.00 TO NODE 2628.00 = 1470.00 FEET.

```

```

*****
FLOW PROCESS FROM NODE 2628.00 TO NODE 2627.00 IS CODE = 31

```

```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1256.00 DOWNSTREAM(FEET) = 1253.00
FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.23
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.13
PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 12.66
LONGEST FLOWPATH FROM NODE 2630.00 TO NODE 2627.00 = 1595.00 FEET.

```

```

*****
FLOW PROCESS FROM NODE 2627.00 TO NODE 2627.00 IS CODE = 1

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```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

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```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 12.66
RAINFALL INTENSITY(INCH/HR) = 5.06
TOTAL STREAM AREA(ACRES) = 4.78
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.13

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	142.86	14.56	4.628	67.19
2	6.13	12.66	5.065	4.78

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	136.68	12.66	5.065
2	148.46	14.56	4.628

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 148.46 Tc(MIN.) = 14.56

TOTAL AREA(ACRES) = 72.0

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2627.00 = 3340.00 FEET.

FLOW PROCESS FROM NODE 2627.00 TO NODE 2623.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1253.00 DOWNSTREAM(FEET) = 1197.00

FLOW LENGTH(FEET) = 1335.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 39.0 INCH PIPE IS 29.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 21.96

ESTIMATED PIPE DIAMETER(INCH) = 39.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 148.46

PIPE TRAVEL TIME(MIN.) = 1.01 Tc(MIN.) = 15.57

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2623.00 = 4675.00 FEET.

FLOW PROCESS FROM NODE 2623.00 TO NODE 2623.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 15.57

RAINFALL INTENSITY(INCH/HR) = 4.43

TOTAL STREAM AREA(ACRES) = 71.97

PEAK FLOW RATE(CFS) AT CONFLUENCE = 148.46

FLOW PROCESS FROM NODE 2626.00 TO NODE 2625.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1330.00

DOWNSTREAM ELEVATION(FEET) = 1280.00

ELEVATION DIFFERENCE(FEET) = 50.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.352

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.902

SUBAREA RUNOFF(CFS) = 0.38

TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 2625.00 TO NODE 2624.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1280.00 DOWNSTREAM(FEET) = 1207.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 440.00 CHANNEL SLOPE = 0.1659

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CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.106
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.46
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 6.45
 AVERAGE FLOW DEPTH(FEET) = 0.20 TRAVEL TIME(MIN.) = 1.14
 Tc(MIN.) = 7.49
 SUBAREA AREA(ACRES) = 4.59 SUBAREA RUNOFF(CFS) = 8.15
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
 TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 8.49

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.29 FLOW VELOCITY(FEET/SEC.) = 8.03
 LONGEST FLOWPATH FROM NODE 2626.00 TO NODE 2624.00 = 520.00 FEET.

 FLOW PROCESS FROM NODE 2624.00 TO NODE 2623.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1201.00 DOWNSTREAM(FEET) = 1197.00
 FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.96
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.49
 PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 7.70
 LONGEST FLOWPATH FROM NODE 2626.00 TO NODE 2623.00 = 645.00 FEET.

 FLOW PROCESS FROM NODE 2623.00 TO NODE 2623.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.70
 RAINFALL INTENSITY(INCH/HR) = 6.98
 TOTAL STREAM AREA(ACRES) = 4.78
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.49

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	148.46	15.57	4.432	71.97
2	8.49	7.70	6.981	4.78

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	102.74	7.70	6.981
2	153.85	15.57	4.432

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

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PEAK FLOW RATE(CFS) =      153.85   Tc(MIN.) =   15.57
TOTAL AREA(ACRES) =      76.8
LONGEST FLOWPATH FROM NODE    2696.00 TO NODE    2623.00 =    4675.00 FEET.

*****
FLOW PROCESS FROM NODE    2623.00 TO NODE    287.00 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1196.00 DOWNSTREAM(FEET) = 1185.50
FLOW LENGTH(FEET) = 130.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 36.0 INCH PIPE IS 25.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 28.59
ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 153.85
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 15.65
LONGEST FLOWPATH FROM NODE    2696.00 TO NODE    287.00 =    4805.00 FEET.

*****
FLOW PROCESS FROM NODE    287.00 TO NODE    287.00 IS CODE =   10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

*****
FLOW PROCESS FROM NODE    2622.00 TO NODE    2621.00 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1435.00
DOWNSTREAM ELEVATION(FEET) = 1395.00
ELEVATION DIFFERENCE(FEET) = 40.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 0.75
TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.75

*****
FLOW PROCESS FROM NODE    2621.00 TO NODE    2620.00 IS CODE =   53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1395.00 DOWNSTREAM(FEET) = 1275.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 645.00 CHANNEL SLOPE = 0.1860
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1530 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.75
FLOW VELOCITY(FEET/SEC) = 2.19 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.91 Tc(MIN.) = 11.17
LONGEST FLOWPATH FROM NODE    2622.00 TO NODE    2620.00 =    745.00 FEET.

*****
FLOW PROCESS FROM NODE    2621.00 TO NODE    2620.00 IS CODE =   81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

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=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.490
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3400
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3407
SUBAREA AREA(ACRES) = 3.37 SUBAREA RUNOFF(CFS) = 6.29
TOTAL AREA(ACRES) = 3.6 TOTAL RUNOFF(CFS) = 6.81
TC(MIN.) = 11.17
*****
FLOW PROCESS FROM NODE 2620.00 TO NODE 2616.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1261.00 DOWNSTREAM(FEET) = 1231.00
FLOW LENGTH(FEET) = 380.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.07
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.81
PIPE TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 11.66
LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.00 = 1125.00 FEET.
*****
FLOW PROCESS FROM NODE 2616.00 TO NODE 2616.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.66
RAINFALL INTENSITY(INCH/HR) = 5.34
TOTAL STREAM AREA(ACRES) = 3.64
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.81
*****
FLOW PROCESS FROM NODE 2619.00 TO NODE 2618.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1249.00
DOWNSTREAM ELEVATION(FEET) = 1247.70
ELEVATION DIFFERENCE(FEET) = 1.30
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.487
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.107
SUBAREA RUNOFF(CFS) = 0.54
TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 0.54
*****
FLOW PROCESS FROM NODE 2618.00 TO NODE 2617.00 IS CODE = 51
-----
>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1247.70 DOWNSTREAM(FEET) = 1239.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 420.00 CHANNEL SLOPE = 0.0207

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CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.084
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.48
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.43
 AVERAGE FLOW DEPTH(FEET) = 0.42 TRAVEL TIME(MIN.) = 2.04
 Tc(MIN.) = 9.53
 SUBAREA AREA(ACRES) = 3.59 SUBAREA RUNOFF(CFS) = 9.83
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 TOTAL AREA(ACRES) = 3.8 PEAK FLOW RATE(CFS) = 10.29

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.60 FLOW VELOCITY(FEET/SEC.) = 4.10
 LONGEST FLOWPATH FROM NODE 2619.00 TO NODE 2617.00 = 485.00 FEET.

 FLOW PROCESS FROM NODE 2617.00 TO NODE 2616.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1236.00 DOWNSTREAM(FEET) = 1231.00
 FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.04
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.29
 PIPE TRAVEL TIME(MIN.) = 0.98 Tc(MIN.) = 10.51
 LONGEST FLOWPATH FROM NODE 2619.00 TO NODE 2616.00 = 900.00 FEET.

 FLOW PROCESS FROM NODE 2616.00 TO NODE 2616.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.51
 RAINFALL INTENSITY(INCH/HR) = 5.71
 TOTAL STREAM AREA(ACRES) = 3.76
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.29

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.81	11.66	5.341	3.64
2	10.29	10.51	5.711	3.76

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.43	10.51	5.711
2	16.44	11.66	5.341

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 16.44 Tc(MIN.) = 11.66

TOTAL AREA(ACRES) = 7.4
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2616.00 TO NODE 2616.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1231.00 DOWNSTREAM(FEET) = 1223.00
 FLOW LENGTH(FEET) = 540.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.60
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 16.44
 PIPE TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 12.70
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.80 = 1665.00 FEET.

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<

FLOW PROCESS FROM NODE 2611.00 TO NODE 2610.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1292.00

DOWNSTREAM ELEVATION(FEET) = 1290.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.880

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.506

SUBAREA RUNOFF(CFS) = 0.47

TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.47

FLOW PROCESS FROM NODE 2610.00 TO NODE 2609.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1290.00 DOWNSTREAM ELEVATION(FEET) = 1265.00
 STREET LENGTH(FEET) = 435.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.49

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.27

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 HALFSTREET FLOOD WIDTH(FEET) = 7.59
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.83
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.29
 STREET FLOW TRAVEL TIME(MIN.) = 1.50 Tc(MIN.) = 8.38
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.608
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.482
 SUBAREA AREA(ACRES) = 1.90 SUBAREA RUNOFF(CFS) = 6.03
 TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 6.44

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 10.09
 FLOW VELOCITY(FEET/SEC.) = 5.52 DEPTH*VELOCITY(FT*FT/SEC.) = 1.76
 LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2609.00 = 515.00 FEET.

 FLOW PROCESS FROM NODE 2609.00 TO NODE 2606.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1241.00
 FLOW LENGTH(FEET) = 275.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.03
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.44
 PIPE TRAVEL TIME(MIN.) = 0.38 Tc(MIN.) = 8.76
 LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.20 = 790.00 FEET.

 FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.76
 RAINFALL INTENSITY(INCH/HR) = 6.42
 TOTAL STREAM AREA(ACRES) = 2.02
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.44

 FLOW PROCESS FROM NODE 2606.60 TO NODE 2606.40 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1267.00
 DOWNSTREAM ELEVATION(FEET) = 1265.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.41
 TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 2606.40 TO NODE 2606.20 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1265.00 DOWNSTREAM ELEVATION(FEET) = 1248.00
STREET LENGTH(FEET) = 215.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.77
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.59
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.94
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.03
STREET FLOW TRAVEL TIME(MIN.) = 0.73 Tc(MIN.) = 8.44
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.581
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 0.92 SUBAREA RUNOFF(CFS) = 2.72
TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 3.11

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.59
FLOW VELOCITY(FEET/SEC.) = 5.34 DEPTH*VELOCITY(FT*FT/SEC.) = 1.32
LONGEST FLOWPATH FROM NODE 2606.60 TO NODE 2606.20 = 295.00 FEET.

FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.44
RAINFALL INTENSITY(INCH/HR) = 6.58
TOTAL STREAM AREA(ACRES) = 1.05
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.11

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.44	8.76	6.421	2.02
2	3.11	8.44	6.581	1.05

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)

			P-26
1	9.31	8.44	6.581
2	9.47	8.76	6.421

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.47 Tc(MIN.) = 8.76

TOTAL AREA(ACRES) = 3.1

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.20 = 790.00 FEET.

FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1242.00 DOWNSTREAM(FEET) = 1232.00

FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 12.85

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.47

PIPE TRAVEL TIME(MIN.) = 0.22 Tc(MIN.) = 8.98

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.00 = 960.00 FEET.

FLOW PROCESS FROM NODE 2606.00 TO NODE 2606.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 8.98

RAINFALL INTENSITY(INCH/HR) = 6.32

TOTAL STREAM AREA(ACRES) = 3.07

PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.47

FLOW PROCESS FROM NODE 2608.00 TO NODE 2607.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1254.00

DOWNSTREAM ELEVATION(FEET) = 1252.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974

SUBAREA RUNOFF(CFS) = 0.38

TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 2607.00 TO NODE 2606.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1252.00 DOWNSTREAM ELEVATION(FEET) = 1238.00

STREET LENGTH(FEET) = 170.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.32
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.19
HALFSTREET FLOOD WIDTH(FEET) = 3.47
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.93
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.92
STREET FLOW TRAVEL TIME(MIN.) = 0.57 Tc(MIN.) = 8.29
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.658
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 0.63 SUBAREA RUNOFF(CFS) = 1.89
TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 2.25

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.22 HALFSTREET FLOOD WIDTH(FEET) = 5.34
FLOW VELOCITY(FEET/SEC.) = 5.19 DEPTH*VELOCITY(FT*FT/SEC.) = 1.16
LONGEST FLOWPATH FROM NODE 2608.00 TO NODE 2606.00 = 250.00 FEET.

FLOW PROCESS FROM NODE 2606.00 TO NODE 2606.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.29
RAINFALL INTENSITY(INCH/HR) = 6.66
TOTAL STREAM AREA(ACRES) = 0.75
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.25

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.47	8.98	6.319	3.07
2	2.25	8.29	6.658	0.75

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.24	8.29	6.658
2	11.61	8.98	6.319

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 11.61 Tc(MIN.) = 8.98
TOTAL AREA(ACRES) = 3.8
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.00 = 960.00 FEET.

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FLOW PROCESS FROM NODE    2606.00 TO NODE    2602.00 IS CODE =   31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1232.00  DOWNSTREAM(FEET) = 1226.00
FLOW LENGTH(FEET) = 150.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.71
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.61
PIPE TRAVEL TIME(MIN.) = 0.21  Tc(MIN.) = 9.20
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2602.00 = 1110.00 FEET.
*****
FLOW PROCESS FROM NODE    2602.00 TO NODE    2602.00 IS CODE =   1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.20
RAINFALL INTENSITY(INCH/HR) = 6.22
TOTAL STREAM AREA(ACRES) = 3.82
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.61
*****
FLOW PROCESS FROM NODE    2605.00 TO NODE    2604.00 IS CODE =   21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1244.00
DOWNSTREAM ELEVATION(FEET) = 1242.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.12  TOTAL RUNOFF(CFS) = 0.38
*****
FLOW PROCESS FROM NODE    2604.00 TO NODE    2602.00 IS CODE =   62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1242.00  DOWNSTREAM ELEVATION(FEET) = 1226.00
STREET LENGTH(FEET) = 495.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.06
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.28
 HALFSTREET FLOOD WIDTH(FEET) = 8.22
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.72
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04
 STREET FLOW TRAVEL TIME(MIN.) = 2.22 Tc(MIN.) = 9.93
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.923
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.00 SUBAREA RUNOFF(CFS) = 5.33
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 5.65
 END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.84
 FLOW VELOCITY(FEET/SEC.) = 4.27 DEPTH*VELOCITY(FT*FT/SEC.) = 1.42
 LONGEST FLOWPATH FROM NODE 2605.00 TO NODE 2602.00 = 575.00 FEET.

 FLOW PROCESS FROM NODE 2602.00 TO NODE 2602.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====
 TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.93
 RAINFALL INTENSITY(INCH/HR) = 5.92
 TOTAL STREAM AREA(ACRES) = 2.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.65

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.61	9.20	6.224	3.82
2	5.65	9.93	5.923	2.12

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.84	9.20	6.224
2	16.70	9.93	5.923

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 16.84 Tc(MIN.) = 9.20
 TOTAL AREA(ACRES) = 5.9
 LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2602.00 = 1110.00 FEET.

 FLOW PROCESS FROM NODE 2602.00 TO NODE 298.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====
 ELEVATION DATA: UPSTREAM(FEET) = 1226.00 DOWNSTREAM(FEET) = 1222.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 130.00 CHANNEL SLOPE = 0.0308
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.058
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 17.14
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.51
AVERAGE FLOW DEPTH(FEET) = 0.70 TRAVEL TIME(MIN.) = 0.39
Tc(MIN.) = 9.59
SUBAREA AREA(ACRES) = 0.22 SUBAREA RUNOFF(CFS) = 0.60
AREA-AVERAGE RUNOFF COEFFICIENT = 0.461
TOTAL AREA(ACRES) = 6.2 PEAK FLOW RATE(CFS) = 17.19

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.71 FLOW VELOCITY(FEET/SEC.) = 5.51
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 298.00 = 1240.00 FEET.

FLOW PROCESS FROM NODE 298.00 TO NODE 2616.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET)	=	1216.00	DOWNSTREAM(FEET)	=	1214.00
FLOW LENGTH(FEET)	=	160.00	MANNING'S N	=	0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS		15.0 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.)	=	8.30			
ESTIMATED PIPE DIAMETER(INCH)	=	24.00	NUMBER OF PIPES	=	1
PIPE-FLOW(CFS)	=	17.19			
PIPE TRAVEL TIME(MIN.)	=	0.32	Tc(MIN.)	=	9.91
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2616.80	=	1400.00 FEET.			

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	17.19	9.91	5.931	6.16

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2616.80 = 1400.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.44	12.70	5.054	7.40

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.80 = 1665.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.01	9.91	5.931
2	31.08	12.70	5.054

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 31.08 Tc(MIN.) = 12.70
TOTAL AREA(ACRES) = 13.6

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

```
*****
FLOW PROCESS FROM NODE    2616.80 TO NODE    2612.00 IS CODE =  31
-----
```

```
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) = 1214.00 DOWNSTREAM(FEET) = 1212.00
FLOW LENGTH(FEET) = 130.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.29
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 31.08
PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 12.91
LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2612.00 = 1795.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE    2612.00 TO NODE    2612.00 IS CODE =  1
-----
```

```
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
```

```
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.91
RAINFALL INTENSITY(INCH/HR) = 5.00
TOTAL STREAM AREA(ACRES) = 13.56
PEAK FLOW RATE(CFS) AT CONFLUENCE = 31.08
```

```
*****
FLOW PROCESS FROM NODE    2615.00 TO NODE    2614.00 IS CODE = 21
-----
```

```
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1275.00
DOWNSTREAM ELEVATION(FEET) = 1230.00
ELEVATION DIFFERENCE(FEET) = 45.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.40
TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 0.40
```

```
*****
FLOW PROCESS FROM NODE    2614.00 TO NODE    2613.00 IS CODE = 53
-----
```

```
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) = 1230.00 DOWNSTREAM(FEET) = 1219.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 260.00 CHANNEL SLOPE = 0.0423
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0423 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.40
FLOW VELOCITY(FEET/SEC) = 1.15 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.76 Tc(MIN.) = 10.86
LONGEST FLOWPATH FROM NODE 2615.00 TO NODE 2613.00 = 360.00 FEET.
```

 FLOW PROCESS FROM NODE 2614.00 TO NODE 2613.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.590
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
 SUBAREA AREA(ACRES) = 0.67 SUBAREA RUNOFF(CFS) = 0.94
 TOTAL AREA(ACRES) = 0.9 TOTAL RUNOFF(CFS) = 1.24
 TC(MIN.) = 10.86

 FLOW PROCESS FROM NODE 2613.00 TO NODE 2612.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1214.00 DOWNSTREAM(FEET) = 1212.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.26
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 1.24
 PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 11.00
 LONGEST FLOWPATH FROM NODE 2615.00 TO NODE 2612.00 = 410.00 FEET.

 FLOW PROCESS FROM NODE 2612.00 TO NODE 2612.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.00
 RAINFALL INTENSITY(INCH/HR) = 5.55
 TOTAL STREAM AREA(ACRES) = 0.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.24

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	31.08	12.91	5.000	13.56
2	1.24	11.00	5.546	0.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	27.71	11.00	5.546
2	32.21	12.91	5.000

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 32.21 Tc(MIN.) = 12.91
 TOTAL AREA(ACRES) = 14.4
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2612.00 = 1795.00 FEET.

 FLOW PROCESS FROM NODE 2612.00 TO NODE 292.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1212.00 DOWNSTREAM(FEET) = 1196.00
 FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.52
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 32.21
 PIPE TRAVEL TIME(MIN.) = 0.63 Tc(MIN.) = 13.55
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 292.00 = 2310.00 FEET.

 FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 297.00 TO NODE 296.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1236.00
 DOWNSTREAM ELEVATION(FEET) = 1234.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.47
 TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.47

 FLOW PROCESS FROM NODE 296.00 TO NODE 295.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1236.00 DOWNSTREAM ELEVATION(FEET) = 1215.00
 STREET LENGTH(FEET) = 475.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.15
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.29
 HALFSTREET FLOOD WIDTH(FEET) = 8.78
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.52
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.32

```

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STREET FLOW TRAVEL TIME(MIN.) = 1.75   Tc(MIN.) = 9.46
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.111
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.67   SUBAREA RUNOFF(CFS) = 7.34
TOTAL AREA(ACRES) = 2.8   PEAK FLOW RATE(CFS) = 7.75

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.35   HALFSTREET FLOOD WIDTH(FEET) = 11.59
FLOW VELOCITY(FEET/SEC.) = 5.20   DEPTH*VELOCITY(FT*FT/SEC.) = 1.81
LONGEST FLOWPATH FROM NODE 297.00 TO NODE 295.00 = 555.00 FEET.

*****
FLOW PROCESS FROM NODE 295.00 TO NODE 294.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1209.00   DOWNSTREAM(FEET) = 1206.00
FLOW LENGTH(FEET) = 125.00   MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.75
ESTIMATED PIPE DIAMETER(INCH) = 18.00   NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.75
PIPE TRAVEL TIME(MIN.) = 0.24   Tc(MIN.) = 9.70
LONGEST FLOWPATH FROM NODE 297.00 TO NODE 294.00 = 680.00 FEET.

*****
FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
=====

*****
FLOW PROCESS FROM NODE 294.90 TO NODE 294.80 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1245.00
DOWNSTREAM ELEVATION(FEET) = 1243.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.44
TOTAL AREA(ACRES) = 0.14   TOTAL RUNOFF(CFS) = 0.44

*****
FLOW PROCESS FROM NODE 294.80 TO NODE 294.70 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1243.00   DOWNSTREAM ELEVATION(FEET) = 1238.00
STREET LENGTH(FEET) = 270.00   CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

```

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DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.93
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.22
HALFSTREET FLOOD WIDTH(FEET) = 5.03
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.41
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.52
STREET FLOW TRAVEL TIME(MIN.) = 1.87 Tc(MIN.) = 9.58
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.063
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 1.09 SUBAREA RUNOFF(CFS) = 2.97
TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 3.36

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 6.97
FLOW VELOCITY(FEET/SEC.) = 2.65 DEPTH*VELOCITY(FT*FT/SEC.) = 0.68
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.70 = 350.00 FEET.

FLOW PROCESS FROM NODE 294.70 TO NODE 294.10 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1236.00 DOWNSTREAM(FEET) = 1223.00
FLOW LENGTH(FEET) = 605.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.71
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.36
PIPE TRAVEL TIME(MIN.) = 1.50 Tc(MIN.) = 11.08
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.10 = 955.00 FEET.

FLOW PROCESS FROM NODE 294.10 TO NODE 294.10 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.08
RAINFALL INTENSITY(INCH/HR) = 5.52
TOTAL STREAM AREA(ACRES) = 1.23
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.36

FLOW PROCESS FROM NODE 294.60 TO NODE 294.50 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

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 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1236.00
 DOWNSTREAM ELEVATION(FEET) = 1234.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.31
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.31

FLOW PROCESS FROM NODE 294.50 TO NODE 294.40 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1234.00 DOWNSTREAM ELEVATION(FEET) = 1233.00
 STREET LENGTH(FEET) = 100.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.61
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.47
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.81
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.41
 STREET FLOW TRAVEL TIME(MIN.) = 0.92 Tc(MIN.) = 8.63
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.483
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 0.89 SUBAREA RUNOFF(CFS) = 2.60
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 2.89

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.53
 FLOW VELOCITY(FEET/SEC.) = 2.02 DEPTH*VELOCITY(FT*FT/SEC.) = 0.54
 LONGEST FLOWPATH FROM NODE 294.60 TO NODE 294.40 = 180.00 FEET.

FLOW PROCESS FROM NODE 294.40 TO NODE 294.10 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1227.00 DOWNSTREAM(FEET) = 1223.00
 FLOW LENGTH(FEET) = 350.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.13
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.89

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PIPE TRAVEL TIME(MIN.) = 1.14 Tc(MIN.) = 9.77
LONGEST FLOWPATH FROM NODE 294.60 TO NODE 294.10 = 530.00 FEET.

FLOW PROCESS FROM NODE 294.10 TO NODE 294.10 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.77
RAINFALL INTENSITY(INCH/HR) = 5.99
TOTAL STREAM AREA(ACRES) = 0.99
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.89

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	3.36	11.08	5.519	1.23
2	2.89	9.77	5.986	0.99

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.85	9.77	5.986
2	6.02	11.08	5.519

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 6.02 Tc(MIN.) = 11.08
TOTAL AREA(ACRES) = 2.2
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.10 = 955.00 FEET.

FLOW PROCESS FROM NODE 294.10 TO NODE 294.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1223.00 DOWNSTREAM(FEET) = 1204.00
FLOW LENGTH(FEET) = 750.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.36
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.02
PIPE TRAVEL TIME(MIN.) = 1.49 Tc(MIN.) = 12.58
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.00 = 1705.00 FEET.

FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.02	12.58	5.087	2.22

LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.00 = 1705.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.75	9.70	6.014	2.82

LONGEST FLOWPATH FROM NODE 297.00 TO NODE 294.00 = 680.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	12.40	9.70	6.014
2	12.58	12.58	5.087

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 12.58 Tc(MIN.) = 12.58
 TOTAL AREA(ACRES) = 5.0

 FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 3 <<<<<
 =====

 FLOW PROCESS FROM NODE 294.00 TO NODE 293.50 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 1204.00 DOWNSTREAM(Feet) = 1200.00
 FLOW LENGTH(Feet) = 150.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.9 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 10.17
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 12.58
 PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 12.82
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 293.50 = 1855.00 FEET.

 FLOW PROCESS FROM NODE 293.50 TO NODE 293.00 IS CODE = 51

 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(Feet) = 1200.00 DOWNSTREAM(Feet) = 1199.00
 CHANNEL LENGTH THRU SUBAREA(Feet) = 100.00 CHANNEL SLOPE = 0.0100
 CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.903
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 12.81
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 3.40
 AVERAGE FLOW DEPTH(Feet) = 0.81 TRAVEL TIME(MIN.) = 0.49
 Tc(MIN.) = 13.31
 SUBAREA AREA(ACRES) = 0.21 SUBAREA RUNOFF(CFS) = 0.46
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 TOTAL AREA(ACRES) = 5.2 PEAK FLOW RATE(CFS) = 12.58

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 0.81 FLOW VELOCITY(Feet/Sec.) = 3.38
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 293.00 = 1955.00 FEET.

 FLOW PROCESS FROM NODE 293.00 TO NODE 292.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1199.00 DOWNSTREAM(FEET) = 1196.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.92
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 12.58
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 13.37
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 292.00 = 2005.00 FEET.

 FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.58	13.37	4.889	5.25

LONGEST FLOWPATH FROM NODE 294.90 TO NODE 292.00 = 2005.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	32.21	13.55	4.848	14.45

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 292.00 = 2310.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	44.36	13.37	4.889
2	44.68	13.55	4.848

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 44.68 Tc(MIN.) = 13.55
 TOTAL AREA(ACRES) = 19.7

 FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

 FLOW PROCESS FROM NODE 292.00 TO NODE 288.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1196.00 DOWNSTREAM(FEET) = 1189.00
 FLOW LENGTH(FEET) = 270.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.53
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 44.68


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PIPE TRAVEL TIME(MIN.) = 0.33    Tc(MIN.) = 13.88
LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 288.00 = 2580.00 FEET.
*****
FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.88
RAINFALL INTENSITY(INCH/HR) = 4.77
TOTAL STREAM AREA(ACRES) = 19.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 44.68
*****
FLOW PROCESS FROM NODE 291.00 TO NODE 290.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1300.00
DOWNSTREAM ELEVATION(FEET) = 1270.00
ELEVATION DIFFERENCE(FEET) = 30.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.37
TOTAL AREA(ACRES) = 0.20    TOTAL RUNOFF(CFS) = 0.37
*****
FLOW PROCESS FROM NODE 290.00 TO NODE 289.00 IS CODE = 52
-----
>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1270.00    DOWNSTREAM(FEET) = 1195.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 840.00    CHANNEL SLOPE = 0.0893
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.37
FLOW VELOCITY(FEET/SEC) = 4.48 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.12    Tc(MIN.) = 10.23
LONGEST FLOWPATH FROM NODE 291.00 TO NODE 289.00 = 940.00 FEET.
*****
FLOW PROCESS FROM NODE 290.00 TO NODE 289.00 IS CODE = 81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.813
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 2.84    SUBAREA RUNOFF(CFS) = 4.13
TOTAL AREA(ACRES) = 3.0    TOTAL RUNOFF(CFS) = 4.42
TC(MIN.) = 10.23
*****
FLOW PROCESS FROM NODE 289.00 TO NODE 288.00 IS CODE = 31

```

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1189.00 DOWNSTREAM(FEET) = 1187.00
 FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.81
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 4.42
 PIPE TRAVEL TIME(MIN.) = 0.49 Tc(MIN.) = 10.71
 LONGEST FLOWPATH FROM NODE 291.00 TO NODE 288.00 = 1110.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.71
 RAINFALL INTENSITY(INCH/HR) = 5.64
 TOTAL STREAM AREA(ACRES) = 3.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.42

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	44.68	13.88	4.773	19.70
2	4.42	10.71	5.641	3.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.90	10.71	5.641
2	48.41	13.88	4.773

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 48.41 Tc(MIN.) = 13.88
 TOTAL AREA(ACRES) = 22.7
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 288.00 = 2580.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 287.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1187.00 DOWNSTREAM(FEET) = 1185.50
 FLOW LENGTH(FEET) = 275.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 39.0 INCH PIPE IS 27.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.81
 ESTIMATED PIPE DIAMETER(INCH) = 39.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 48.41
 PIPE TRAVEL TIME(MIN.) = 0.59 Tc(MIN.) = 14.47
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 287.00 = 2855.00 FEET.

FLOW PROCESS FROM NODE 287.00 TO NODE 287.00 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	48.41	14.47	4.647	22.74

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 287.00 = 2855.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	153.85	15.65	4.418	76.75

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 287.00 = 4805.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	190.67	14.47	4.647
2	199.88	15.65	4.418

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 199.88 Tc(MIN.) = 15.65
TOTAL AREA(ACRES) = 99.5

FLOW PROCESS FROM NODE 287.00 TO NODE 287.00 IS CODE = 12

>>>>CLEAR MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 287.00 TO NODE 246.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1185.50 DOWNSTREAM(FEET) = 1178.00
FLOW LENGTH(FEET) = 480.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 51.0 INCH PIPE IS 41.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.09
ESTIMATED PIPE DIAMETER(INCH) = 51.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 199.88
PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 16.15
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 246.00 = 5285.00 FEET.

FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 286.00 TO NODE 285.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

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UPSTREAM ELEVATION(FEET) = 1218.00
DOWNSTREAM ELEVATION(FEET) = 1216.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.41
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 285.00 TO NODE 284.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1216.00 DOWNSTREAM ELEVATION(FEET) = 1203.00
STREET LENGTH(FEET) = 380.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.24
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.30
HALFSTREET FLOOD WIDTH(FEET) = 9.41
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.11
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.25
STREET FLOW TRAVEL TIME(MIN.) = 1.54 Tc(MIN.) = 9.25
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.200
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.74 SUBAREA RUNOFF(CFS) = 7.64
TOTAL AREA(ACRES) = 2.9 PEAK FLOW RATE(CFS) = 8.01

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 12.41
FLOW VELOCITY(FEET/SEC.) = 4.75 DEPTH*VELOCITY(FT*FT/SEC.) = 1.73
LONGEST FLOWPATH FROM NODE 286.00 TO NODE 284.00 = 460.00 FEET.

FLOW PROCESS FROM NODE 284.00 TO NODE 259.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1197.00 DOWNSTREAM(FEET) = 1195.00
FLOW LENGTH(FEET) = 180.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.54
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.01
PIPE TRAVEL TIME(MIN.) = 0.46 Tc(MIN.) = 9.71
LONGEST FLOWPATH FROM NODE 286.00 TO NODE 259.00 = 640.00 FEET.

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FLOW PROCESS FROM NODE      259.00 TO NODE      259.00 IS CODE =  10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
=====
*****
FLOW PROCESS FROM NODE      283.00 TO NODE      282.00 IS CODE =  21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4600
S.C.S. CURVE NUMBER (AMC II) =  0
INITIAL SUBAREA FLOW-LENGTH(FEET) =  80.00
UPSTREAM ELEVATION(FEET) = 1268.00
DOWNSTREAM ELEVATION(FEET) = 1266.00
ELEVATION DIFFERENCE(FEET) =  2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =  7.592
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.044
SUBAREA RUNOFF(CFS) =  0.75
TOTAL AREA(ACRES) =  0.23  TOTAL RUNOFF(CFS) =  0.75
*****
FLOW PROCESS FROM NODE      282.00 TO NODE      281.00 IS CODE =  62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1266.00  DOWNSTREAM ELEVATION(FEET) = 1262.00
STREET LENGTH(FEET) =  220.00  CURB HEIGHT(INCHES) =  6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =  8.00
INSIDE STREET CROSSFALL(DECIMAL) =  0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =  0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =  2
STREET PARKWAY CROSSFALL(DECIMAL) =  0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =  0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section =  0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =  3.69
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) =  0.26
HALFSTREET FLOOD WIDTH(FEET) =  7.34
AVERAGE FLOW VELOCITY(FEET/SEC.) =  2.68
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =  0.71
STREET FLOW TRAVEL TIME(MIN.) =  1.37  Tc(MIN.) =  8.96
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.331
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) =  0
AREA-AVERAGE RUNOFF COEFFICIENT =  0.451
SUBAREA AREA(ACRES) =  2.06  SUBAREA RUNOFF(CFS) =  5.87
TOTAL AREA(ACRES) =  2.3  PEAK FLOW RATE(CFS) =  6.54

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31  HALFSTREET FLOOD WIDTH(FEET) =  9.66
FLOW VELOCITY(FEET/SEC.) =  3.03  DEPTH*VELOCITY(FT*FT/SEC.) =  0.94
LONGEST FLOWPATH FROM NODE      283.00 TO NODE      281.00 =  300.00 FEET.
*****
FLOW PROCESS FROM NODE      281.00 TO NODE      280.60 IS CODE =  31

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 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1256.00 DOWNSTREAM(FEET) = 1241.00
 FLOW LENGTH(FEET) = 270.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.38
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.54
 PIPE TRAVEL TIME(MIN.) = 0.40 Tc(MIN.) = 9.35
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 280.60 = 570.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 280.60 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.35
 RAINFALL INTENSITY(INCH/HR) = 6.16
 TOTAL STREAM AREA(ACRES) = 2.29
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.54

FLOW PROCESS FROM NODE 280.90 TO NODE 280.80 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1269.00
 DOWNSTREAM ELEVATION(FEET) = 1266.00
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.736
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.609
 SUBAREA RUNOFF(CFS) = 0.55
 TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.55

FLOW PROCESS FROM NODE 280.80 TO NODE 280.70 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1266.00 DOWNSTREAM ELEVATION(FEET) = 1248.00
 STREET LENGTH(FEET) = 300.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.41

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STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.20
HALFSTREET FLOOD WIDTH(FEET) = 4.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.27
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86
STREET FLOW TRAVEL TIME(MIN.) = 1.17 Tc(MIN.) = 7.91
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.862
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 0.56 SUBAREA RUNOFF(CFS) = 1.73
TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 2.22

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.23 HALFSTREET FLOOD WIDTH(FEET) = 5.91
FLOW VELOCITY(FEET/SEC.) = 4.48 DEPTH*VELOCITY(FT*FT/SEC.) = 1.05
LONGEST FLOWPATH FROM NODE 280.90 TO NODE 280.70 = 380.00 FEET.

FLOW PROCESS FROM NODE 280.70 TO NODE 280.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1242.00 DOWNSTREAM(FEET) = 1241.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.30
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.22
PIPE TRAVEL TIME(MIN.) = 0.11 Tc(MIN.) = 8.01
LONGEST FLOWPATH FROM NODE 280.90 TO NODE 280.60 = 420.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 280.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.01
RAINFALL INTENSITY(INCH/HR) = 6.80
TOTAL STREAM AREA(ACRES) = 0.72
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.22

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.54	9.35	6.157	2.29
2	2.22	8.01	6.803	0.72

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.82	8.01	6.803
2	8.55	9.35	6.157

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.55 Tc(MIN.) = 9.35

TOTAL AREA(ACRES) = 3.0

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 280.60 = 570.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 277.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1241.00 DOWNSTREAM(FEET) = 1238.00

FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.1 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 11.12

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 8.55

PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 9.46

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 277.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.46

RAINFALL INTENSITY(INCH/HR) = 6.11

TOTAL STREAM AREA(ACRES) = 3.01

PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.55

FLOW PROCESS FROM NODE 280.00 TO NODE 279.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1257.00

DOWNSTREAM ELEVATION(FEET) = 1255.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974

SUBAREA RUNOFF(CFS) = 0.75

TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.75

FLOW PROCESS FROM NODE 279.00 TO NODE 278.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1255.00 DOWNSTREAM ELEVATION(FEET) = 1244.00

STREET LENGTH(FEET) = 340.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

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SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.34
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.25
 HALFSTREET FLOOD WIDTH(FEET) = 6.91
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.47
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.88
 STREET FLOW TRAVEL TIME(MIN.) = 1.63 Tc(MIN.) = 9.34
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.162
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.58 SUBAREA RUNOFF(CFS) = 7.15
 TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 7.82

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 9.16
 FLOW VELOCITY(FEET/SEC.) = 3.97 DEPTH*VELOCITY(FT*FT/SEC.) = 1.19
 LONGEST FLOWPATH FROM NODE 280.00 TO NODE 278.00 = 420.00 FEET.

 FLOW PROCESS FROM NODE 278.00 TO NODE 277.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1239.00 DOWNSTREAM(FEET) = 1238.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.18
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.82
 PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 9.44
 LONGEST FLOWPATH FROM NODE 280.00 TO NODE 277.00 = 470.00 FEET.

 FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.44
 RAINFALL INTENSITY(INCH/HR) = 6.12
 TOTAL STREAM AREA(ACRES) = 2.82
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.82

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.55	9.46	6.113	3.01
2	7.82	9.44	6.119	2.82

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.36	9.44	6.119
2	16.36	9.46	6.113

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.36 Tc(MIN.) = 9.46
 TOTAL AREA(ACRES) = 5.8
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 277.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 275.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1238.00 DOWNSTREAM(FEET) = 1228.00
 FLOW LENGTH(FEET) = 180.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.37
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 16.36
 PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 9.67
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 275.00 = 820.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 275.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.67
 RAINFALL INTENSITY(INCH/HR) = 6.03
 TOTAL STREAM AREA(ACRES) = 5.83
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.36

FLOW PROCESS FROM NODE 275.30 TO NODE 275.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1247.00
 DOWNSTREAM ELEVATION(FEET) = 1243.00
 ELEVATION DIFFERENCE(FEET) = 4.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.120
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.094
 SUBAREA RUNOFF(CFS) = 0.51
 TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.51

FLOW PROCESS FROM NODE 275.20 TO NODE 275.10 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1243.00 DOWNSTREAM ELEVATION(FEET) = 1235.00

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STREET LENGTH(FEET) = 165.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.00
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.18
HALFSTREET FLOOD WIDTH(FEET) = 3.41
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.80
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.70
STREET FLOW TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 6.84
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.531
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 0.29 SUBAREA RUNOFF(CFS) = 0.98
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 1.46

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.78
FLOW VELOCITY(FEET/SEC.) = 3.87 DEPTH*VELOCITY(FT*FT/SEC.) = 0.82
LONGEST FLOWPATH FROM NODE 275.30 TO NODE 275.10 = 245.00 FEET.

FLOW PROCESS FROM NODE 275.10 TO NODE 275.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1229.00 DOWNSTREAM(FEET) = 1228.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.57
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.46
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 6.96
LONGEST FLOWPATH FROM NODE 275.30 TO NODE 275.00 = 285.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 275.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.96
RAINFALL INTENSITY(INCH/HR) = 7.45
TOTAL STREAM AREA(ACRES) = 0.43
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.46

** CONFLUENCE DATA **

STREAM	RUNOFF	Tc	INTENSITY	AREA

			P-26	
NUMBER	(CFS)	(MIN.)	(INCH/HOUR)	(ACRE)
1	16.36	9.67	6.027	5.83
2	1.46	6.96	7.448	0.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	14.70	6.96	7.448
2	17.54	9.67	6.027

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 17.54 Tc(MIN.) = 9.67
TOTAL AREA(ACRES) = 6.3
LONGEST FLOWPATH FROM NODE 283.00 TO NODE 275.00 = 820.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 293.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1228.00 DOWNSTREAM(FEET) = 1218.00
FLOW LENGTH(FEET) = 330.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 12.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.66
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 17.54
PIPE TRAVEL TIME(MIN.) = 0.47 Tc(MIN.) = 10.14
LONGEST FLOWPATH FROM NODE 283.00 TO NODE 293.20 = 1150.00 FEET.

FLOW PROCESS FROM NODE 293.20 TO NODE 293.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.14
RAINFALL INTENSITY(INCH/HR) = 5.84
TOTAL STREAM AREA(ACRES) = 6.26
PEAK FLOW RATE(CFS) AT CONFLUENCE = 17.54

FLOW PROCESS FROM NODE 293.80 TO NODE 293.60 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1236.00
DOWNSTREAM ELEVATION(FEET) = 1234.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.35
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.35

FLOW PROCESS FROM NODE 293.60 TO NODE 293.40 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1234.00 DOWNSTREAM ELEVATION(FEET) = 1224.00
STREET LENGTH(FEET) = 390.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.94
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 8.47
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.40
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.97
STREET FLOW TRAVEL TIME(MIN.) = 1.91 Tc(MIN.) = 9.62
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.045
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 1.90 SUBAREA RUNOFF(CFS) = 5.17
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 5.47

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 11.22
FLOW VELOCITY(FEET/SEC.) = 3.89 DEPTH*VELOCITY(FT*FT/SEC.) = 1.32
LONGEST FLOWPATH FROM NODE 293.80 TO NODE 293.40 = 470.00 FEET.

FLOW PROCESS FROM NODE 293.40 TO NODE 293.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1219.00 DOWNSTREAM(FEET) = 1218.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.11
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.47
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 9.71
LONGEST FLOWPATH FROM NODE 293.80 TO NODE 293.20 = 510.00 FEET.

FLOW PROCESS FROM NODE 293.20 TO NODE 293.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.71

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RAINFALL INTENSITY(INCH/HR) = 6.01
 TOTAL STREAM AREA(ACRES) = 2.01
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.47

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HR)	AREA (ACRE)
1	17.54	10.14	5.845	6.26
2	5.47	9.71	6.012	2.01

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HR)
1	22.52	9.71	6.012
2	22.86	10.14	5.845

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.86 Tc(MIN.) = 10.14
 TOTAL AREA(ACRES) = 8.3
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 293.20 = 1150.00 FEET.

FLOW PROCESS FROM NODE 293.20 TO NODE 264.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1218.00 DOWNSTREAM(FEET) = 1216.00
 FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.35
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 22.86
 PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 10.19
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 264.00 = 1195.00 FEET.

FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<

FLOW PROCESS FROM NODE 272.00 TO NODE 271.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1246.00
 DOWNSTREAM ELEVATION(FEET) = 1244.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.22
 TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.22

FLOW PROCESS FROM NODE 271.00 TO NODE 270.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1244.00 DOWNSTREAM ELEVATION(FEET) = 1233.00
STREET LENGTH(FEET) = 850.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.22
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.47
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.28
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.61
STREET FLOW TRAVEL TIME(MIN.) = 6.21 Tc(MIN.) = 13.92
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.765
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.74 SUBAREA RUNOFF(CFS) = 5.87
TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 6.03

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 10.03
FLOW VELOCITY(FEET/SEC.) = 2.61 DEPTH*VELOCITY(FT*FT/SEC.) = 0.83
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 270.00 = 930.00 FEET.

FLOW PROCESS FROM NODE 270.00 TO NODE 265.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1227.00 DOWNSTREAM(FEET) = 1217.00
FLOW LENGTH(FEET) = 560.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.35
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.03
PIPE TRAVEL TIME(MIN.) = 1.27 Tc(MIN.) = 15.19
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 265.00 = 1490.00 FEET.

FLOW PROCESS FROM NODE 265.00 TO NODE 265.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.19
RAINFALL INTENSITY(INCH/HR) = 4.50

TOTAL STREAM AREA(ACRES) = 2.81
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.03

 FLOW PROCESS FROM NODE 269.00 TO NODE 268.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1235.00
 DOWNSTREAM ELEVATION(FEET) = 1233.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.35
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.35

 FLOW PROCESS FROM NODE 268.00 TO NODE 265.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1233.00 DOWNSTREAM ELEVATION(FEET) = 1222.00
 STREET LENGTH(FEET) = 520.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.54
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.25
 HALFSTREET FLOOD WIDTH(FEET) = 6.91
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.83
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.72
 STREET FLOW TRAVEL TIME(MIN.) = 3.06 Tc(MIN.) = 10.77
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.621

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.51 SUBAREA RUNOFF(CFS) = 6.35
 TOTAL AREA(ACRES) = 2.6 PEAK FLOW RATE(CFS) = 6.63

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 9.41
 FLOW VELOCITY(FEET/SEC.) = 3.21 DEPTH*VELOCITY(FT*FT/SEC.) = 0.98
 LONGEST FLOWPATH FROM NODE 269.00 TO NODE 265.00 = 600.00 FEET.

 FLOW PROCESS FROM NODE 265.00 TO NODE 265.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.77
RAINFALL INTENSITY(INCH/HR) = 5.62
TOTAL STREAM AREA(ACRES) = 2.62
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.63
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.03	15.19	4.504	2.81
2	6.63	10.77	5.621	2.62

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.90	10.77	5.621
2	11.33	15.19	4.504

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 11.33    Tc(MIN.) = 15.19
TOTAL AREA(ACRES) = 5.4
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 265.00 = 1490.00 FEET.
```

```
FLOW PROCESS FROM NODE 265.00 TO NODE 264.00 IS CODE = 31
```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1217.00 DOWNSTREAM(FEET) = 1216.00
FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.67
ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.33
PIPE TRAVEL TIME(MIN.) = 0.15    Tc(MIN.) = 15.34
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 264.00 = 1560.00 FEET.
```

```
FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 11
```

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.33	15.34	4.475	5.43

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 264.00 = 1560.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.86	10.19	5.825	8.27

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 264.00 = 1195.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.39	10.19	5.825
2	28.89	15.34	4.475

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 30.39 Tc(MIN.) = 10.19
 TOTAL AREA(ACRES) = 13.7

 FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

 FLOW PROCESS FROM NODE 264.00 TO NODE 260.40 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1216.00 DOWNSTREAM(FEET) = 1201.00
 FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.03
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 30.39
 PIPE TRAVEL TIME(MIN.) = 0.66 Tc(MIN.) = 10.85
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.40 = 2075.00 FEET.

 FLOW PROCESS FROM NODE 260.40 TO NODE 260.40 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.85
 RAINFALL INTENSITY(INCH/HR) = 5.59
 TOTAL STREAM AREA(ACRES) = 13.70
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 30.39

 FLOW PROCESS FROM NODE 260.70 TO NODE 260.60 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1230.00
 DOWNSTREAM ELEVATION(FEET) = 1228.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.25
 TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.25

 FLOW PROCESS FROM NODE 260.60 TO NODE 260.50 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1228.00 DOWNSTREAM ELEVATION(FEET) = 1207.00
 STREET LENGTH(FEET) = 740.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.42
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.32
 HALFSTREET FLOOD WIDTH(FEET) = 9.97
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.87
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.22
 STREET FLOW TRAVEL TIME(MIN.) = 3.19 Tc(MIN.) = 10.90
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.579
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 3.29 SUBAREA RUNOFF(CFS) = 8.26
 TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 8.46

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 13.22
 FLOW VELOCITY(FEET/SEC.) = 4.46 DEPTH*VELOCITY(FT*FT/SEC.) = 1.70
 LONGEST FLOWPATH FROM NODE 260.70 TO NODE 260.50 = 820.00 FEET.

FLOW PROCESS FROM NODE 260.50 TO NODE 260.40 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1202.00 DOWNSTREAM(FEET) = 1201.00
 FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.75
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.46
 PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 10.93
 LONGEST FLOWPATH FROM NODE 260.70 TO NODE 260.40 = 840.00 FEET.

FLOW PROCESS FROM NODE 260.40 TO NODE 260.40 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.93
 RAINFALL INTENSITY(INCH/HR) = 5.57
 TOTAL STREAM AREA(ACRES) = 3.37
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.46

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	30.39	10.85	5.595	13.70
2	8.46	10.93	5.569	3.37

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.79	10.85	5.595
2	38.71	10.93	5.569

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 38.79 Tc(MIN.) = 10.85
TOTAL AREA(ACRES) = 17.1
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.40 = 2075.00 FEET.

FLOW PROCESS FROM NODE 260.40 TO NODE 260.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1201.00 DOWNSTREAM(FEET) = 1186.00
FLOW LENGTH(FEET) = 512.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 17.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.96
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 38.79
PIPE TRAVEL TIME(MIN.) = 0.61 Tc(MIN.) = 11.46
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.00 = 2587.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.46
RAINFALL INTENSITY(INCH/HR) = 5.40
TOTAL STREAM AREA(ACRES) = 17.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 38.79

FLOW PROCESS FROM NODE 260.30 TO NODE 260.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1209.00
DOWNSTREAM ELEVATION(FEET) = 1207.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.41

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TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 260.20 TO NODE 260.10 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1207.00 DOWNSTREAM ELEVATION(FEET) = 1192.00
STREET LENGTH(FEET) = 510.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

 **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.94
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 8.22
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.57
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.00
STREET FLOW TRAVEL TIME(MIN.) = 2.38 Tc(MIN.) = 10.09
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.864

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 1.91 SUBAREA RUNOFF(CFS) = 5.04
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 5.38

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.84
FLOW VELOCITY(FEET/SEC.) = 4.07 DEPTH*VELOCITY(FT*FT/SEC.) = 1.35
LONGEST FLOWPATH FROM NODE 260.30 TO NODE 260.10 = 590.00 FEET.

FLOW PROCESS FROM NODE 260.10 TO NODE 260.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1188.00 DOWNSTREAM(FEET) = 1187.50
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.44
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.38
PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.14
LONGEST FLOWPATH FROM NODE 260.30 TO NODE 260.00 = 615.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.14
 RAINFALL INTENSITY(INCH/HR) = 5.84
 TOTAL STREAM AREA(ACRES) = 2.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.38

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	38.79	11.46	5.400	17.07
2	5.38	10.14	5.843	2.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	41.24	10.14	5.843
2	43.76	11.46	5.400

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 43.76 Tc(MIN.) = 11.46
 TOTAL AREA(ACRES) = 19.1
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.00 = 2587.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 259.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1187.50 DOWNSTREAM(FEET) = 1186.00
 FLOW LENGTH(FEET) = 140.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 33.0 INCH PIPE IS 23.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.80
 ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 43.76
 PIPE TRAVEL TIME(MIN.) = 0.24 Tc(MIN.) = 11.70
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 259.00 = 2727.00 FEET.

FLOW PROCESS FROM NODE 259.00 TO NODE 259.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	43.76	11.70	5.329	19.11

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 259.00 = 2727.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.01	9.71	6.010	2.87

LONGEST FLOWPATH FROM NODE 286.00 TO NODE 259.00 = 640.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)

			P-26
1	44.33	9.71	6.010
2	50.86	11.70	5.329

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 50.86 Tc(MIN.) = 11.70
 TOTAL AREA(ACRES) = 22.0

 FLOW PROCESS FROM NODE 259.00 TO NODE 259.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

 FLOW PROCESS FROM NODE 259.00 TO NODE 258.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1186.00 DOWNSTREAM(FEET) = 1184.00
 FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 33.0 INCH PIPE IS 24.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 10.70
 ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 50.86
 PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 11.95
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 258.00 = 2887.00 FEET.

 FLOW PROCESS FROM NODE 258.00 TO NODE 246.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1184.00 DOWNSTREAM(FEET) = 1172.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 300.00 CHANNEL SLOPE = 0.0400
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.092
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 52.09
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FT/SEC.) = 8.26
 AVERAGE FLOW DEPTH(FT) = 1.18 TRAVEL TIME(MIN.) = 0.61
 Tc(MIN.) = 12.55
 SUBAREA AREA(ACRES) = 1.93 SUBAREA RUNOFF(CFS) = 2.46
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.434
 TOTAL AREA(ACRES) = 23.9 PEAK FLOW RATE(CFS) = 52.84

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FT) = 1.19 FLOW VELOCITY(FT/SEC.) = 8.30
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

 FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

 FLOW PROCESS FROM NODE 257.00 TO NODE 256.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1205.00
 DOWNSTREAM ELEVATION(FEET) = 1203.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.53
 TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 0.53

 FLOW PROCESS FROM NODE 256.00 TO NODE 255.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

 UPSTREAM ELEVATION(FEET) = 1203.00 DOWNSTREAM ELEVATION(FEET) = 1185.00
 STREET LENGTH(FEET) = 670.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.07
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.35
 HALFSTREET FLOOD WIDTH(FEET) = 11.59
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.07
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.42
 STREET FLOW TRAVEL TIME(MIN.) = 2.74 Tc(MIN.) = 10.45
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.730

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 4.27 SUBAREA RUNOFF(CFS) = 11.01
 TOTAL AREA(ACRES) = 4.4 PEAK FLOW RATE(CFS) = 11.45

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.42 HALFSTREET FLOOD WIDTH(FEET) = 15.09
 FLOW VELOCITY(FEET/SEC.) = 4.72 DEPTH*VELOCITY(FT*FT/SEC.) = 1.97
 LONGEST FLOWPATH FROM NODE 257.00 TO NODE 255.00 = 750.00 FEET.

 FLOW PROCESS FROM NODE 255.00 TO NODE 248.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

 ELEVATION DATA: UPSTREAM(FEET) = 1179.00 DOWNSTREAM(FEET) = 1175.00
 FLOW LENGTH(FEET) = 355.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.21

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ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 11.45
PIPE TRAVEL TIME(MIN.) = 0.82 Tc(MIN.) = 11.28
LONGEST FLOWPATH FROM NODE 257.00 TO NODE 248.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.28
RAINFALL INTENSITY(INCH/HR) = 5.46
TOTAL STREAM AREA(ACRES) = 4.44
PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.45

FLOW PROCESS FROM NODE 254.00 TO NODE 253.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1188.00
DOWNSTREAM ELEVATION(FEET) = 1186.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
SUBAREA RUNOFF(CFS) = 0.38
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 253.00 TO NODE 248.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1186.00 DOWNSTREAM ELEVATION(FEET) = 1181.00
STREET LENGTH(FEET) = 330.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.24
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.34
HALFSTREET FLOOD WIDTH(FEET) = 11.28
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.99
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.02
STREET FLOW TRAVEL TIME(MIN.) = 1.84 Tc(MIN.) = 9.55
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.074

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.82 SUBAREA RUNOFF(CFS) = 7.71
 TOTAL AREA(ACRES) = 2.9 PEAK FLOW RATE(CFS) = 8.04

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.41 HALFSTREET FLOOD WIDTH(FEET) = 14.72
 FLOW VELOCITY(FEET/SEC.) = 3.47 DEPTH*VELOCITY(FT*FT/SEC.) = 1.43
 LONGEST FLOWPATH FROM NODE 254.00 TO NODE 248.00 = 410.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.55
 RAINFALL INTENSITY(INCH/HR) = 6.07
 TOTAL STREAM AREA(ACRES) = 2.94
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.04

FLOW PROCESS FROM NODE 251.00 TO NODE 250.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1203.00
 DOWNSTREAM ELEVATION(FEET) = 1201.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.974
 SUBAREA RUNOFF(CFS) = 0.28
 TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.28

FLOW PROCESS FROM NODE 250.00 TO NODE 248.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1201.00 DOWNSTREAM ELEVATION(FEET) = 1181.00
 STREET LENGTH(FEET) = 890.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 9.19
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.40
 HALFSTREET FLOOD WIDTH(FEET) = 14.34
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.17

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PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.68
 STREET FLOW TRAVEL TIME(MIN.) = 3.56 Tc(MIN.) = 11.27
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.459
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 7.17 SUBAREA RUNOFF(CFS) = 17.61
 TOTAL AREA(ACRES) = 7.3 PEAK FLOW RATE(CFS) = 17.84

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.48 HALFSTREET FLOOD WIDTH(FEET) = 18.00
 FLOW VELOCITY(FEET/SEC.) = 4.79 DEPTH*VELOCITY(FT*FT/SEC.) = 2.28
 LONGEST FLOWPATH FROM NODE 251.00 TO NODE 248.00 = 970.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.27
 RAINFALL INTENSITY(INCH/HR) = 5.46
 TOTAL STREAM AREA(ACRES) = 7.26
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 17.84

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.45	11.28	5.458	4.44
2	8.04	9.55	6.074	2.94
3	17.84	11.27	5.459	7.26

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	32.85	9.55	6.074
2	36.50	11.27	5.459
3	36.50	11.28	5.458

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 36.50 Tc(MIN.) = 11.27
 TOTAL AREA(ACRES) = 14.6
 LONGEST FLOWPATH FROM NODE 257.00 TO NODE 248.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 246.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1175.00 DOWNSTREAM(FEET) = 1172.00
 FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 19.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.79
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 36.50
 PIPE TRAVEL TIME(MIN.) = 0.21 Tc(MIN.) = 11.48

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LONGEST FLOWPATH FROM NODE 257.00 TO NODE 246.00 = 1255.00 FEET.

FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	36.50	11.48	5.394	14.64

LONGEST FLOWPATH FROM NODE 257.00 TO NODE 246.00 = 1255.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	52.84	12.55	5.092	23.91

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	84.83	11.48	5.394
2	87.30	12.55	5.092

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 87.30 Tc(MIN.) = 12.55
TOTAL AREA(ACRES) = 38.5

FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	87.30	12.55	5.092	38.55

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	199.88	16.15	4.330	99.49

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 246.00 = 5285.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	242.72	12.55	5.092
2	274.10	16.15	4.330

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 274.10 Tc(MIN.) = 16.15
TOTAL AREA(ACRES) = 138.0

FLOW PROCESS FROM NODE 246.00 TO NODE 245.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(Feet) = 1175.00 DOWNSTREAM(Feet) = 1170.00
FLOW LENGTH(Feet) = 450.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 63.0 INCH PIPE IS 47.8 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 15.55
ESTIMATED PIPE DIAMETER(INCH) = 63.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 274.10
PIPE TRAVEL TIME(Min.) = 0.48 Tc(Min.) = 16.63
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 245.50 = 5735.00 FEET.

*****
FLOW PROCESS FROM NODE 245.50 TO NODE 245.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(Feet) = 1170.00 DOWNSTREAM(Feet) = 1098.00
FLOW LENGTH(Feet) = 170.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 23.1 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 61.58
ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 274.10
PIPE TRAVEL TIME(Min.) = 0.05 Tc(Min.) = 16.67
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 245.00 = 5905.00 FEET.

*****
FLOW PROCESS FROM NODE 245.00 TO NODE 26.00 IS CODE = 53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(Feet) = 1098.00 DOWNSTREAM(Feet) = 970.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 1180.00 CHANNEL SLOPE = 0.1085
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1064 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 274.10
FLOW VELOCITY(Feet/Sec) = 11.84 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(Min.) = 1.66 Tc(Min.) = 18.33
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 26.00 = 7085.00 FEET.

*****
FLOW PROCESS FROM NODE 245.00 TO NODE 26.00 IS CODE = 81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.989
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3754
SUBAREA AREA(ACRES) = 39.89 SUBAREA RUNOFF(CFS) = 39.78
TOTAL AREA(ACRES) = 177.9 TOTAL RUNOFF(CFS) = 274.10
TC(Min.) = 18.33
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE
=====
END OF STUDY SUMMARY:
TOTAL AREA(ACRES) = 177.9 TC(Min.) = 18.33
PEAK FLOW RATE(CFS) = 274.10
=====
END OF RATIONAL METHOD ANALYSIS

```

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2014 Advanced Engineering Software (aes)
 Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

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 San Diego, CA 92122

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * NO DETENTION *
 * 10 YEAR STORM *

FILE NAME: P-26-10.DAT
 TIME/DATE OF STUDY: 10:26 01/20/2016

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 10.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 2.450
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES: WIDTH LIP	MANNING HIKE FACTOR
	(FT)	(FT)		(FT)	(FT) (FT)	(n)
1	18.0	8.0	0.020/0.020/0.020	0.50	2.00 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2695.00 TO NODE 2694.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
 UPSTREAM ELEVATION(FEET) = 1454.00
 DOWNSTREAM ELEVATION(FEET) = 1452.50
 ELEVATION DIFFERENCE(FEET) = 1.50
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.176
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.113

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SUBAREA RUNOFF(CFS) = 0.37
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.37

FLOW PROCESS FROM NODE 2694.00 TO NODE 2693.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1452.50 DOWNSTREAM ELEVATION(FEET) = 1447.00
STREET LENGTH(FEET) = 250.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.91
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.53
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.58
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.53
STREET FLOW TRAVEL TIME(MIN.) = 1.62 Tc(MIN.) = 8.79
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.485
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 0.46 SUBAREA RUNOFF(CFS) = 1.07
TOTAL AREA(ACRES) = 0.6 PEAK FLOW RATE(CFS) = 1.40

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.24 HALFSTREET FLOOD WIDTH(FEET) = 6.03
FLOW VELOCITY(FEET/SEC.) = 2.74 DEPTH*VELOCITY(FT*FT/SEC.) = 0.65
LONGEST FLOWPATH FROM NODE 2695.00 TO NODE 2693.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2693.00 TO NODE 2692.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1441.00 DOWNSTREAM(FEET) = 1440.00
FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.41
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.40
PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 9.08
LONGEST FLOWPATH FROM NODE 2695.00 TO NODE 2692.00 = 400.00 FEET.

FLOW PROCESS FROM NODE 2692.00 TO NODE 2692.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.08
RAINFALL INTENSITY(INCH/HR) = 4.39
TOTAL STREAM AREA(ACRES) = 0.60
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.40

FLOW PROCESS FROM NODE 2691.00 TO NODE 2690.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1464.00
DOWNSTREAM ELEVATION(FEET) = 1461.00
ELEVATION DIFFERENCE(FEET) = 3.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.936
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.227
SUBAREA RUNOFF(CFS) = 0.63
TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 0.63

FLOW PROCESS FROM NODE 2690.00 TO NODE 2692.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1461.00 DOWNSTREAM ELEVATION(FEET) = 1448.00
STREET LENGTH(FEET) = 500.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.78
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.33
HALFSTREET FLOOD WIDTH(FEET) = 10.53
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.80
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.24
STREET FLOW TRAVEL TIME(MIN.) = 2.19 Tc(MIN.) = 9.13
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.378

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 3.63 SUBAREA RUNOFF(CFS) = 8.26
TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 8.79

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.39 HALFSTREET FLOOD WIDTH(FEET) = 13.66
FLOW VELOCITY(FEET/SEC.) = 4.37 DEPTH*VELOCITY(FT*FT/SEC.) = 1.70
LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2692.00 = 595.00 FEET.

 FLOW PROCESS FROM NODE 2692.00 TO NODE 2692.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.13
 RAINFALL INTENSITY(INCH/HR) = 4.38
 TOTAL STREAM AREA(ACRES) = 3.86
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.79

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	1.40	9.08	4.394	0.60
2	8.79	9.13	4.378	3.86

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.14	9.08	4.394
2	10.18	9.13	4.378

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.18 Tc(MIN.) = 9.13
 TOTAL AREA(ACRES) = 4.5
 LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2692.00 = 595.00 FEET.

 FLOW PROCESS FROM NODE 2692.00 TO NODE 2689.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1434.00 DOWNSTREAM(FEET) = 1433.60
 FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.35
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.18
 PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 9.20
 LONGEST FLOWPATH FROM NODE 2691.00 TO NODE 2689.00 = 625.00 FEET.

 FLOW PROCESS FROM NODE 2689.00 TO NODE 2689.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.20
 RAINFALL INTENSITY(INCH/HR) = 4.36
 TOTAL STREAM AREA(ACRES) = 4.46
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.18

 FLOW PROCESS FROM NODE 2696.00 TO NODE 2695.50 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1464.00
 DOWNSTREAM ELEVATION(FEET) = 1461.00
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.772
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.857
 SUBAREA RUNOFF(CFS) = 0.73
 TOTAL AREA(ACRES) = 0.43 TOTAL RUNOFF(CFS) = 0.73

 FLOW PROCESS FROM NODE 2695.50 TO NODE 2689.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

 ELEVATION DATA: UPSTREAM(FEET) = 1458.00 DOWNSTREAM(FEET) = 1433.60
 FLOW LENGTH(FEET) = 600.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.40
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 0.73
 PIPE TRAVEL TIME(MIN.) = 1.85 Tc(MIN.) = 9.63
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2689.00 = 680.00 FEET.

 FLOW PROCESS FROM NODE 2689.00 TO NODE 2689.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

 TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.63
 RAINFALL INTENSITY(INCH/HR) = 4.23
 TOTAL STREAM AREA(ACRES) = 0.43
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.73

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.18	9.20	4.357	4.46
2	0.73	9.63	4.231	0.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.88	9.20	4.357
2	10.62	9.63	4.231

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.88 Tc(MIN.) = 9.20
 TOTAL AREA(ACRES) = 4.9
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2689.00 = 680.00 FEET.

 FLOW PROCESS FROM NODE 2689.00 TO NODE 2688.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1433.60 DOWNSTREAM(FEET) = 1363.00
 FLOW LENGTH(FEET) = 975.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.38
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 10.88
 PIPE TRAVEL TIME(MIN.) = 1.13 Tc(MIN.) = 10.33
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2688.00 = 1655.00 FEET.

 FLOW PROCESS FROM NODE 2688.00 TO NODE 2688.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.33
 RAINFALL INTENSITY(INCH/HR) = 4.04
 TOTAL STREAM AREA(ACRES) = 4.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.88

 FLOW PROCESS FROM NODE 2699.00 TO NODE 2698.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 85.00
 UPSTREAM ELEVATION(FEET) = 1605.00
 DOWNSTREAM ELEVATION(FEET) = 1590.00
 ELEVATION DIFFERENCE(FEET) = 15.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.778
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.881
 SUBAREA RUNOFF(CFS) = 0.47
 TOTAL AREA(ACRES) = 0.23 TOTAL RUNOFF(CFS) = 0.47

 FLOW PROCESS FROM NODE 2698.00 TO NODE 2697.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1590.00 DOWNSTREAM(FEET) = 1494.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 475.00 CHANNEL SLOPE = 0.2021
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1611 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.47
 FLOW VELOCITY(FEET/SEC) = 2.25 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.52 Tc(MIN.) = 9.30
 LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2697.00 = 560.00 FEET.

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FLOW PROCESS FROM NODE 2698.00 TO NODE 2697.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.326

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 1.66 SUBAREA RUNOFF(CFS) = 2.51

TOTAL AREA(ACRES) = 1.9 TOTAL RUNOFF(CFS) = 2.86

TC(MIN.) = 9.30

FLOW PROCESS FROM NODE 2697.00 TO NODE 2690.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1494.00 DOWNSTREAM(FEET) = 1375.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 515.00 CHANNEL SLOPE = 0.2311

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1737 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 2.86

FLOW VELOCITY(FEET/SEC) = 3.31 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 2.59 Tc(MIN.) = 11.89

LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2690.00 = 1075.00 FEET.

FLOW PROCESS FROM NODE 2697.00 TO NODE 2690.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.692

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 6.14 SUBAREA RUNOFF(CFS) = 7.93

TOTAL AREA(ACRES) = 8.0 TOTAL RUNOFF(CFS) = 10.38

TC(MIN.) = 11.89

FLOW PROCESS FROM NODE 2690.00 TO NODE 2688.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1369.00 DOWNSTREAM(FEET) = 1363.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 17.08

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 10.38

PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 11.94

LONGEST FLOWPATH FROM NODE 2699.00 TO NODE 2688.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2688.00 TO NODE 2688.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.94
RAINFALL INTENSITY(INCH/HR) = 3.68
TOTAL STREAM AREA(ACRES) = 8.03
PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.38

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.88	10.33	4.043	4.89
2	10.38	11.94	3.682	8.03

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.85	10.33	4.043
2	20.28	11.94	3.682

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```

PEAK FLOW RATE(CFS) = 20.28   Tc(MIN.) = 11.94
TOTAL AREA(ACRES) = 12.9
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2688.00 = 1655.00 FEET.

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FLOW PROCESS FROM NODE 2688.00 TO NODE 2681.00 IS CODE = 31
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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

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=====
ELEVATION DATA: UPSTREAM(Feet) = 1363.00 DOWNSTREAM(Feet) = 1362.00
FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.4 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 10.06
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 20.28
PIPE TRAVEL TIME(MIN.) = 0.08   Tc(MIN.) = 12.02
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2681.00 = 1705.00 FEET.

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FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 10
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>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

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FLOW PROCESS FROM NODE 2687.00 TO NODE 2686.00 IS CODE = 21
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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

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=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 80.00
UPSTREAM ELEVATION(Feet) = 1411.00
DOWNSTREAM ELEVATION(Feet) = 1409.00
ELEVATION DIFFERENCE(Feet) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882

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SUBAREA RUNOFF(CFS) = 0.44
TOTAL AREA(ACRES) = 0.20 TOTAL RUNOFF(CFS) = 0.44

FLOW PROCESS FROM NODE 2686.00 TO NODE 2685.50 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(Feet) = 1409.00 DOWNSTREAM ELEVATION(Feet) = 1390.00
STREET LENGTH(Feet) = 415.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(Feet) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(Feet) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.78
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(Feet) = 0.28
HALFSTREET FLOOD WIDTH(Feet) = 8.34
AVERAGE FLOW VELOCITY(Feet/Sec.) = 4.48
PRODUCT OF DEPTH&VELOCITY(Ft*Ft/Sec.) = 1.27
STREET FLOW TRAVEL TIME(Min.) = 1.54 Tc(Min.) = 9.25
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.339
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.516
SUBAREA AREA(ACRES) = 2.96 SUBAREA RUNOFF(CFS) = 6.68
TOTAL AREA(ACRES) = 3.2 PEAK FLOW RATE(CFS) = 7.07

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(Feet) = 0.34 HALFSTREET FLOOD WIDTH(Feet) = 11.09
FLOW VELOCITY(Feet/Sec.) = 5.13 DEPTH*VELOCITY(Ft*Ft/Sec.) = 1.73
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2685.50 = 495.00 FEET.

FLOW PROCESS FROM NODE 2685.50 TO NODE 2685.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1384.00 DOWNSTREAM(Feet) = 1380.00
FLOW LENGTH(Feet) = 60.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 12.42
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.07
PIPE TRAVEL TIME(Min.) = 0.08 Tc(Min.) = 9.34
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2685.00 = 555.00 FEET.

FLOW PROCESS FROM NODE 2685.00 TO NODE 2682.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1380.00 DOWNSTREAM(FEET) = 1379.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 85.00 CHANNEL SLOPE = 0.0118
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.182

```

*USER SPECIFIED(SUBAREA):

```

USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 7.25
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.04
AVERAGE FLOW DEPTH(FEET) = 0.58 TRAVEL TIME(MIN.) = 0.47
Tc(MIN.) = 9.80
SUBAREA AREA(ACRES) = 0.25 SUBAREA RUNOFF(CFS) = 0.37
AREA-AVERAGE RUNOFF COEFFICIENT = 0.503
TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 7.18

```

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

```

DEPTH(FEET) = 0.57 FLOW VELOCITY(FEET/SEC.) = 3.05
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2682.00 = 640.00 FEET.

```

```

FLOW PROCESS FROM NODE 2682.00 TO NODE 2682.00 IS CODE = 1

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.80
RAINFALL INTENSITY(INCH/HR) = 4.18
TOTAL STREAM AREA(ACRES) = 3.41
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.18

```

```

FLOW PROCESS FROM NODE 2684.00 TO NODE 2683.00 IS CODE = 21

```

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

```

=====
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1467.00
DOWNSTREAM ELEVATION(FEET) = 1423.00
ELEVATION DIFFERENCE(FEET) = 44.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.580
SUBAREA RUNOFF(CFS) = 0.88
TOTAL AREA(ACRES) = 0.45 TOTAL RUNOFF(CFS) = 0.88

```

```

FLOW PROCESS FROM NODE 2683.00 TO NODE 2682.00 IS CODE = 31

```

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1417.00 DOWNSTREAM(FEET) = 1373.00
FLOW LENGTH(FEET) = 110.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 1.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.68
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

```


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PIPE-FLOW(CFS) = 0.88
PIPE TRAVEL TIME(MIN.) = 0.14 Tc(MIN.) = 6.41
LONGEST FLOWPATH FROM NODE 2684.00 TO NODE 2682.00 = 210.00 FEET.

FLOW PROCESS FROM NODE 2682.00 TO NODE 2682.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.41
RAINFALL INTENSITY(INCH/HR) = 5.50
TOTAL STREAM AREA(ACRES) = 0.45
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.88

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.18	9.80	4.182	3.41
2	0.88	6.41	5.499	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.57	6.41	5.499
2	7.85	9.80	4.182

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 7.85 Tc(MIN.) = 9.80
TOTAL AREA(ACRES) = 3.9
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2682.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 2682.00 TO NODE 2681.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1373.00 DOWNSTREAM(FEET) = 1362.00
FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.11
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.85
PIPE TRAVEL TIME(MIN.) = 0.76 Tc(MIN.) = 10.56
LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2681.00 = 1055.00 FEET.

FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.85	10.56	3.985	3.86

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LONGEST FLOWPATH FROM NODE 2687.00 TO NODE 2681.00 = 1055.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.28	12.02	3.665	12.92

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2681.00 = 1705.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	25.66	10.56	3.985
2	27.50	12.02	3.665

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 27.50 Tc(MIN.) = 12.02
TOTAL AREA(ACRES) = 16.8

FLOW PROCESS FROM NODE 2681.00 TO NODE 2681.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2681.00 TO NODE 2676.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1362.00 DOWNSTREAM(FEET) = 1359.00
FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.76
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 27.50
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 12.12
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2676.00 = 1785.00 FEET.

FLOW PROCESS FROM NODE 2676.00 TO NODE 2676.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 12.12
RAINFALL INTENSITY(INCH/HR) = 3.65
TOTAL STREAM AREA(ACRES) = 16.78
PEAK FLOW RATE(CFS) AT CONFLUENCE = 27.50

FLOW PROCESS FROM NODE 2680.00 TO NODE 2679.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1447.00
DOWNSTREAM ELEVATION(FEET) = 1443.00
ELEVATION DIFFERENCE(FEET) = 4.00

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.175
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.313
SUBAREA RUNOFF(CFS) = 0.43
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.43

FLOW PROCESS FROM NODE 2679.00 TO NODE 2678.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1443.00 DOWNSTREAM ELEVATION(FEET) = 1369.50
STREET LENGTH(FEET) = 730.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.24
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.22
HALFSTREET FLOOD WIDTH(FEET) = 5.03
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.60
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.21
STREET FLOW TRAVEL TIME(MIN.) = 2.17 Tc(MIN.) = 7.35
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.036
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 1.38 SUBAREA RUNOFF(CFS) = 3.61
TOTAL AREA(ACRES) = 1.5 PEAK FLOW RATE(CFS) = 3.95

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.26 HALFSTREET FLOOD WIDTH(FEET) = 7.03
FLOW VELOCITY(FEET/SEC.) = 6.16 DEPTH*VELOCITY(FT*FT/SEC.) = 1.58
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2678.00 = 805.00 FEET.

FLOW PROCESS FROM NODE 2678.00 TO NODE 2677.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1365.00 DOWNSTREAM(FEET) = 1364.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.42
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.95
PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 7.44
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2677.00 = 845.00 FEET.

FLOW PROCESS FROM NODE 2677.00 TO NODE 2676.00 IS CODE = 31

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>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1364.00 DOWNSTREAM(FEET) = 1359.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.18
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.95
PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 7.51
LONGEST FLOWPATH FROM NODE 2680.00 TO NODE 2676.00 = 895.00 FEET.

FLOW PROCESS FROM NODE 2676.00 TO NODE 2676.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.51
RAINFALL INTENSITY(INCH/HR) = 4.97
TOTAL STREAM AREA(ACRES) = 1.51
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.95

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	27.50	12.12	3.647	16.78
2	3.95	7.51	4.967	1.51

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.99	7.51	4.967
2	30.40	12.12	3.647

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 30.40 Tc(MIN.) = 12.12
TOTAL AREA(ACRES) = 18.3
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2676.00 = 1785.00 FEET.

FLOW PROCESS FROM NODE 2676.00 TO NODE 2672.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1359.00 DOWNSTREAM(FEET) = 1323.00
FLOW LENGTH(FEET) = 320.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.43
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 30.40
PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 12.37
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2672.00 = 2105.00 FEET.

FLOW PROCESS FROM NODE 2672.00 TO NODE 2672.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.37
 RAINFALL INTENSITY(INCH/HR) = 3.60
 TOTAL STREAM AREA(ACRES) = 18.29
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 30.40

 FLOW PROCESS FROM NODE 2675.00 TO NODE 2674.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
 UPSTREAM ELEVATION(FEET) = 1427.00
 DOWNSTREAM ELEVATION(FEET) = 1420.00
 ELEVATION DIFFERENCE(FEET) = 7.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.553
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.033
 SUBAREA RUNOFF(CFS) = 0.11
 TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.11

 FLOW PROCESS FROM NODE 2674.00 TO NODE 2673.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1420.00 DOWNSTREAM(FEET) = 1330.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 440.00 CHANNEL SLOPE = 0.2045
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1623 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.11
 FLOW VELOCITY(FEET/SEC) = 2.26 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.25 Tc(MIN.) = 8.80
 LONGEST FLOWPATH FROM NODE 2675.00 TO NODE 2673.00 = 515.00 FEET.

 FLOW PROCESS FROM NODE 2674.00 TO NODE 2673.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.481
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 2.36 SUBAREA RUNOFF(CFS) = 3.70
 TOTAL AREA(ACRES) = 2.4 TOTAL RUNOFF(CFS) = 3.78
 TC(MIN.) = 8.80

 FLOW PROCESS FROM NODE 2673.00 TO NODE 2672.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

```

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ELEVATION DATA: UPSTREAM(FEET) = 1324.00 DOWNSTREAM(FEET) = 1323.00
FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.39
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.78
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 8.84
LONGEST FLOWPATH FROM NODE 2675.00 TO NODE 2672.00 = 535.00 FEET.

*****
FLOW PROCESS FROM NODE 2672.00 TO NODE 2672.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.84
RAINFALL INTENSITY(INCH/HR) = 4.47
TOTAL STREAM AREA(ACRES) = 2.41
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.78

** CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER      (CFS)      (MIN.)  (INCH/HR)      (ACRE)
    1        30.40      12.37      3.599        18.29
    2         3.78       8.84       4.470         2.41

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF      Tc      INTENSITY
NUMBER      (CFS)      (MIN.)  (INCH/HR)
    1        28.26       8.84      4.470
    2        33.45      12.37      3.599

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 33.45 Tc(MIN.) = 12.37
TOTAL AREA(ACRES) = 20.7
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2672.00 = 2105.00 FEET.

*****
FLOW PROCESS FROM NODE 2672.00 TO NODE 2651.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1323.00 DOWNSTREAM(FEET) = 1309.00
FLOW LENGTH(FEET) = 250.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 16.82
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 33.45
PIPE TRAVEL TIME(MIN.) = 0.25 Tc(MIN.) = 12.62
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2651.00 = 2355.00 FEET.

*****
FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
=====

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 FLOW PROCESS FROM NODE 2671.00 TO NODE 2670.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1445.00
 DOWNSTREAM ELEVATION(FEET) = 1420.00
 ELEVATION DIFFERENCE(FEET) = 25.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.147
 SUBAREA RUNOFF(CFS) = 0.35
 TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.35

 FLOW PROCESS FROM NODE 2670.00 TO NODE 2669.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1420.00 DOWNSTREAM(FEET) = 1385.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 280.00 CHANNEL SLOPE = 0.1250
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1183 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.35
 FLOW VELOCITY(FEET/SEC) = 1.93 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 2.42 Tc(MIN.) = 9.52
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2669.00 = 380.00 FEET.

 FLOW PROCESS FROM NODE 2670.00 TO NODE 2669.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.260
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2900
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2875
 SUBAREA AREA(ACRES) = 4.07 SUBAREA RUNOFF(CFS) = 5.03
 TOTAL AREA(ACRES) = 4.3 TOTAL RUNOFF(CFS) = 5.32
 TC(MIN.) = 9.52

 FLOW PROCESS FROM NODE 2669.00 TO NODE 2668.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1379.00 DOWNSTREAM(FEET) = 1375.00
 FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.65
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.32
 PIPE TRAVEL TIME(MIN.) = 1.22 Tc(MIN.) = 10.75

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LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2668.00 = 795.00 FEET.

FLOW PROCESS FROM NODE 2668.00 TO NODE 2663.00 IS CODE = 52

>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1375.00 DOWNSTREAM(FEET) = 1348.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 600.00 CHANNEL SLOPE = 0.0450
 CHANNEL FLOW THRU SUBAREA(CFS) = 5.32
 FLOW VELOCITY(FEET/SEC) = 4.54 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 2.20 Tc(MIN.) = 12.95
 LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2663.00 = 1395.00 FEET.

FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.95
 RAINFALL INTENSITY(INCH/HR) = 3.49
 TOTAL STREAM AREA(ACRES) = 4.34
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.32

FLOW PROCESS FROM NODE 2667.00 TO NODE 2666.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1420.00
 DOWNSTREAM ELEVATION(FEET) = 1405.00
 ELEVATION DIFFERENCE(FEET) = 15.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.580
 SUBAREA RUNOFF(CFS) = 0.37
 TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.37

FLOW PROCESS FROM NODE 2666.00 TO NODE 2663.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1405.00 DOWNSTREAM(FEET) = 1348.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 680.00 CHANNEL SLOPE = 0.0838
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0838 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.37
 FLOW VELOCITY(FEET/SEC) = 1.62 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 6.99 Tc(MIN.) = 13.26
 LONGEST FLOWPATH FROM NODE 2667.00 TO NODE 2663.00 = 780.00 FEET.

FLOW PROCESS FROM NODE 2666.00 TO NODE 2663.00 IS CODE = 81

 >>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
 =====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.442
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 2.98 SUBAREA RUNOFF(CFS) = 3.59
 TOTAL AREA(ACRES) = 3.2 TOTAL RUNOFF(CFS) = 3.82
 TC(MIN.) = 13.26

 FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 13.26
 RAINFALL INTENSITY(INCH/HR) = 3.44
 TOTAL STREAM AREA(ACRES) = 3.17
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.82

 FLOW PROCESS FROM NODE 2665.50 TO NODE 2665.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1363.00
 DOWNSTREAM ELEVATION(FEET) = 1361.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.55
 TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.55

 FLOW PROCESS FROM NODE 2665.00 TO NODE 2664.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1361.00 DOWNSTREAM ELEVATION(FEET) = 1350.00
 STREET LENGTH(FEET) = 550.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.37
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27

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 HALFSTREET FLOOD WIDTH(FEET) = 7.84
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.86
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.78
 STREET FLOW TRAVEL TIME(MIN.) = 3.20 Tc(MIN.) = 10.91
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.902
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4600
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.459
 SUBAREA AREA(ACRES) = 4.22 SUBAREA RUNOFF(CFS) = 7.57
 TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 8.01

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 10.34
 FLOW VELOCITY(FEET/SEC.) = 3.29 DEPTH*VELOCITY(FT*FT/SEC.) = 1.06
 LONGEST FLOWPATH FROM NODE 2665.50 TO NODE 2664.00 = 630.00 FEET.

 FLOW PROCESS FROM NODE 2664.00 TO NODE 2663.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1344.00	DOWNSTREAM(FEET) =	1342.00
FLOW LENGTH(FEET) =	110.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO	18.000		
DEPTH OF FLOW IN	18.0 INCH	PIPE IS	10.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =	7.94		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	8.01		
PIPE TRAVEL TIME(MIN.) =	0.23	Tc(MIN.) =	11.14
LONGEST FLOWPATH FROM NODE	2665.50	TO NODE	2663.00 = 740.00 FEET.

 FLOW PROCESS FROM NODE 2663.00 TO NODE 2663.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM	3 ARE:
TIME OF CONCENTRATION(MIN.) =	11.14
RAINFALL INTENSITY(INCH/HR) =	3.85
TOTAL STREAM AREA(ACRES) =	4.47
PEAK FLOW RATE(CFS) AT CONFLUENCE =	8.01

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.32	12.95	3.494	4.34
2	3.82	13.26	3.442	3.17
3	8.01	11.14	3.850	4.47

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	15.80	11.14	3.850
2	16.32	12.95	3.494
3	16.22	13.26	3.442

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.32 Tc(MIN.) = 12.95

TOTAL AREA(ACRES) = 12.0

LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2663.00 = 1395.00 FEET.

FLOW PROCESS FROM NODE 2663.00 TO NODE 2657.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1312.00

FLOW LENGTH(FEET) = 372.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 16.58

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 16.32

PIPE TRAVEL TIME(MIN.) = 0.37 Tc(MIN.) = 13.33

LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2657.00 = 1767.00 FEET.

FLOW PROCESS FROM NODE 2657.00 TO NODE 2657.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 13.33

RAINFALL INTENSITY(INCH/HR) = 3.43

TOTAL STREAM AREA(ACRES) = 11.98

PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.32

FLOW PROCESS FROM NODE 2662.00 TO NODE 2661.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 66.67

UPSTREAM ELEVATION(FEET) = 1400.00

DOWNSTREAM ELEVATION(FEET) = 1399.00

ELEVATION DIFFERENCE(FEET) = 1.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.346

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.639

SUBAREA RUNOFF(CFS) = 0.33

TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.33

FLOW PROCESS FROM NODE 2661.00 TO NODE 2660.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1399.00 DOWNSTREAM ELEVATION(FEET) = 1355.00

STREET LENGTH(FEET) = 935.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.35
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27
 HALFSTREET FLOOD WIDTH(FEET) = 7.84
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.39
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.20
 STREET FLOW TRAVEL TIME(MIN.) = 3.55 Tc(MIN.) = 11.89
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.692
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 3.60 SUBAREA RUNOFF(CFS) = 5.98
 TOTAL AREA(ACRES) = 3.8 PEAK FLOW RATE(CFS) = 6.25

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 10.41
 FLOW VELOCITY(FEET/SEC.) = 5.08 DEPTH*VELOCITY(FT*FT/SEC.) = 1.65
 LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2660.00 = 1001.67 FEET.

 FLOW PROCESS FROM NODE 2660.00 TO NODE 2659.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1349.00 DOWNSTREAM(FEET) = 1348.40
 FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.95
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 6.25
 PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 12.06
 LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2659.00 = 1061.67 FEET.

 FLOW PROCESS FROM NODE 2659.00 TO NODE 2658.00 IS CODE = 51

 >>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1348.40 DOWNSTREAM(FEET) = 1347.60
 CHANNEL LENGTH THRU SUBAREA(FEET) = 80.00 CHANNEL SLOPE = 0.0100
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.567
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.32
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.78
 AVERAGE FLOW DEPTH(FEET) = 0.55 TRAVEL TIME(MIN.) = 0.48
 Tc(MIN.) = 12.54
 SUBAREA AREA(ACRES) = 0.17 SUBAREA RUNOFF(CFS) = 0.15
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.441
 TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 6.25

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END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.55 FLOW VELOCITY(FEET/SEC.) = 2.76
LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2658.00 = 1141.67 FEET.

FLOW PROCESS FROM NODE 2658.00 TO NODE 2657.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1313.00
FLOW LENGTH(FEET) = 540.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.11
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.25
PIPE TRAVEL TIME(MIN.) = 0.81 Tc(MIN.) = 13.35
LONGEST FLOWPATH FROM NODE 2662.00 TO NODE 2657.00 = 1681.67 FEET.

FLOW PROCESS FROM NODE 2657.00 TO NODE 2657.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 13.35
RAINFALL INTENSITY(INCH/HR) = 3.43
TOTAL STREAM AREA(ACRES) = 3.93
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.25

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.32	13.33	3.430	11.98
2	6.25	13.35	3.426	3.93

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.55	13.33	3.430
2	22.55	13.35	3.426

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.55 Tc(MIN.) = 13.33
TOTAL AREA(ACRES) = 15.9
LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2657.00 = 1767.00 FEET.

FLOW PROCESS FROM NODE 2657.00 TO NODE 2650.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1312.00 DOWNSTREAM(FEET) = 1308.00
FLOW LENGTH(FEET) = 100.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 13.72

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ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 22.55
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 13.45
LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.60 = 1867.00 FEET.

FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 13.45
RAINFALL INTENSITY(INCH/HR) = 3.41
TOTAL STREAM AREA(ACRES) = 15.91
PEAK FLOW RATE(CFS) AT CONFLUENCE = 22.55

FLOW PROCESS FROM NODE 2650.90 TO NODE 2650.80 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1356.00
DOWNSTREAM ELEVATION(FEET) = 1354.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.22
TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.22

FLOW PROCESS FROM NODE 2650.80 TO NODE 2650.70 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1354.00 DOWNSTREAM ELEVATION(FEET) = 1315.00
STREET LENGTH(FEET) = 690.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.74
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.27
HALFSTREET FLOOD WIDTH(FEET) = 7.91
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.84
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.33
STREET FLOW TRAVEL TIME(MIN.) = 2.38 Tc(MIN.) = 10.09
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.105
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500

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S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 3.79 SUBAREA RUNOFF(CFS) = 7.00
TOTAL AREA(ACRES) = 3.9 PEAK FLOW RATE(CFS) = 7.19

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.66
FLOW VELOCITY(FEET/SEC.) = 5.60 DEPTH*VELOCITY(FT*FT/SEC.) = 1.84
LONGEST FLOWPATH FROM NODE 2650.90 TO NODE 2650.70 = 770.00 FEET.

FLOW PROCESS FROM NODE 2650.70 TO NODE 2650.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1309.00 DOWNSTREAM(FEET) = 1308.00
FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.87
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.19
PIPE TRAVEL TIME(MIN.) = 0.18 Tc(MIN.) = 10.27
LONGEST FLOWPATH FROM NODE 2650.90 TO NODE 2650.60 = 845.00 FEET.

FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.27
RAINFALL INTENSITY(INCH/HR) = 4.06
TOTAL STREAM AREA(ACRES) = 3.89
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.19

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.55	13.45	3.410	15.91
2	7.19	10.27	4.058	3.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.14	10.27	4.058
2	28.59	13.45	3.410

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 28.59 Tc(MIN.) = 13.45
TOTAL AREA(ACRES) = 19.8
LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.60 = 1867.00 FEET.

FLOW PROCESS FROM NODE 2650.60 TO NODE 2650.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1308.00  DOWNSTREAM(FEET) = 1298.20
FLOW LENGTH(FEET) = 500.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 18.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.88
ESTIMATED PIPE DIAMETER(INCH) = 24.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 28.59
PIPE TRAVEL TIME(MIN.) = 0.77  Tc(MIN.) = 14.21
LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.00 = 2367.00 FEET.

```

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*****
FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 10
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>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
=====

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*****
FLOW PROCESS FROM NODE 2656.00 TO NODE 2655.00 IS CODE = 21
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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====

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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 55.00
UPSTREAM ELEVATION(FEET) = 1390.00
DOWNSTREAM ELEVATION(FEET) = 1389.50
ELEVATION DIFFERENCE(FEET) = 0.50
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.992
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.770
SUBAREA RUNOFF(CFS) = 0.37
TOTAL AREA(ACRES) = 0.15  TOTAL RUNOFF(CFS) = 0.37

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*****
FLOW PROCESS FROM NODE 2655.00 TO NODE 2654.00 IS CODE = 62
-----

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>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

```

```

UPSTREAM ELEVATION(FEET) = 1389.50  DOWNSTREAM ELEVATION(FEET) = 1315.00
STREET LENGTH(FEET) = 970.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

```

```

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

```

```

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

```

```

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.87
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.21
HALFSTREET FLOOD WIDTH(FEET) = 4.84
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.88
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04
STREET FLOW TRAVEL TIME(MIN.) = 3.31  Tc(MIN.) = 11.30
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.814

```

```

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0

```


P-26-10
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 1.50 SUBAREA RUNOFF(CFS) = 2.98
TOTAL AREA(ACRES) = 1.6 PEAK FLOW RATE(CFS) = 3.27

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.78
FLOW VELOCITY(FEET/SEC.) = 5.39 DEPTH*VELOCITY(FT*FT/SEC.) = 1.36
LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2654.00 = 1025.00 FEET.

FLOW PROCESS FROM NODE 2654.00 TO NODE 2653.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1309.00 DOWNSTREAM(FEET) = 1305.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.65
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.27
PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 11.38
LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2653.00 = 1075.00 FEET.

FLOW PROCESS FROM NODE 2653.00 TO NODE 2652.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1305.00 DOWNSTREAM(FEET) = 1304.70
CHANNEL LENGTH THRU SUBAREA(FEET) = 30.00 CHANNEL SLOPE = 0.0100
CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.757
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.36
TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 2.63
AVERAGE FLOW DEPTH(FEET) = 0.51 TRAVEL TIME(MIN.) = 0.19
Tc(MIN.) = 11.57
SUBAREA AREA(ACRES) = 3.18 SUBAREA RUNOFF(CFS) = 4.18
AREA-AVERAGE RUNOFF COEFFICIENT = 0.408
TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 7.41

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.61 FLOW VELOCITY(FEET/SEC.) = 2.89
LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2652.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 2652.00 TO NODE 2651.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1299.00 DOWNSTREAM(FEET) = 1298.50
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.7 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.75
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.41

P-26-10
PIPE TRAVEL TIME(MIN.) = 0.10 Tc(MIN.) = 11.67
LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2651.00 = 1145.00 FEET.

FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.41	11.67	3.737	4.83

LONGEST FLOWPATH FROM NODE 2656.00 TO NODE 2651.00 = 1145.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	33.45	12.62	3.553	20.70

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2651.00 = 2355.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.34	11.67	3.737
2	40.49	12.62	3.553

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 40.49 Tc(MIN.) = 12.62
TOTAL AREA(ACRES) = 25.5

FLOW PROCESS FROM NODE 2651.00 TO NODE 2651.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<
=====

FLOW PROCESS FROM NODE 2651.00 TO NODE 2650.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1298.50 DOWNSTREAM(FEET) = 1298.20
FLOW LENGTH(FEET) = 30.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 22.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 9.40
ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 40.49
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 12.67
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2650.00 = 2385.00 FEET.

FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<
=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	40.49	12.67	3.544	25.53

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2650.00 = 2385.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	28.59	14.21	3.290	19.80

LONGEST FLOWPATH FROM NODE 2671.00 TO NODE 2650.00 = 2367.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	65.98	12.67	3.544
2	66.19	14.21	3.290

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 66.19 Tc(MIN.) = 14.21
 TOTAL AREA(ACRES) = 45.3

 FLOW PROCESS FROM NODE 2650.00 TO NODE 2650.00 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 2650.00 TO NODE 2635.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1298.20 DOWNSTREAM(FEET) = 1292.50
 FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 22.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 16.93
 ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 66.19
 PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 14.37
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2635.00 = 2545.00 FEET.

 FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 10

 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
 =====

 FLOW PROCESS FROM NODE 2649.00 TO NODE 2648.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1400.00
 DOWNSTREAM ELEVATION(FEET) = 1398.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.55
 TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.55

 FLOW PROCESS FROM NODE 2648.00 TO NODE 2647.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1398.00 DOWNSTREAM ELEVATION(FEET) = 1380.00
 STREET LENGTH(FEET) = 720.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.93
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.35
 HALFSTREET FLOOD WIDTH(FEET) = 11.66
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.93
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.37
 STREET FLOW TRAVEL TIME(MIN.) = 3.05 Tc(MIN.) = 10.76
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.937
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4700
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.469
 SUBAREA AREA(ACRES) = 5.78 SUBAREA RUNOFF(CFS) = 10.70
 TOTAL AREA(ACRES) = 6.0 PEAK FLOW RATE(CFS) = 11.14

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.42 HALFSTREET FLOOD WIDTH(FEET) = 15.16
 FLOW VELOCITY(FEET/SEC.) = 4.56 DEPTH*VELOCITY(FT*FT/SEC.) = 1.91
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2647.00 = 800.00 FEET.

 FLOW PROCESS FROM NODE 2647.00 TO NODE 2643.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1374.00 DOWNSTREAM(FEET) = 1361.00
 FLOW LENGTH(FEET) = 300.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.95
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 11.14
 PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 11.18
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2643.00 = 1100.00 FEET.

 FLOW PROCESS FROM NODE 2643.00 TO NODE 2643.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.18
 RAINFALL INTENSITY(INCH/HR) = 3.84
 TOTAL STREAM AREA(ACRES) = 6.03

PEAK FLOW RATE(CFS) AT CONFLUENCE = P-26-10
11.14

FLOW PROCESS FROM NODE 2646.00 TO NODE 2645.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1395.00
DOWNSTREAM ELEVATION(FEET) = 1393.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.18

FLOW PROCESS FROM NODE 2645.00 TO NODE 2644.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1393.00 DOWNSTREAM ELEVATION(FEET) = 1368.00
STREET LENGTH(FEET) = 730.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.71
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 6.22
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.47
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.83
STREET FLOW TRAVEL TIME(MIN.) = 3.51 Tc(MIN.) = 11.22
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.833

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 4.06 SUBAREA RUNOFF(CFS) = 7.00
TOTAL AREA(ACRES) = 4.1 PEAK FLOW RATE(CFS) = 7.14

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.72
FLOW VELOCITY(FEET/SEC.) = 3.93 DEPTH*VELOCITY(FT*FT/SEC.) = 1.14
LONGEST FLOWPATH FROM NODE 2646.00 TO NODE 2644.00 = 810.00 FEET.

FLOW PROCESS FROM NODE 2644.00 TO NODE 2643.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1362.00  DOWNSTREAM(FEET) = 1361.00
FLOW LENGTH(FEET) = 50.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 8.00
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.14
PIPE TRAVEL TIME(MIN.) = 0.10  Tc(MIN.) = 11.32
LONGEST FLOWPATH FROM NODE 2646.00 TO NODE 2643.00 = 860.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2643.00 TO NODE 2643.00 IS CODE = 1
-----
```

```
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 11.32
RAINFALL INTENSITY(INCH/HR) = 3.81
TOTAL STREAM AREA(ACRES) = 4.14
PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.14
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.14	11.18	3.842	6.03
2	7.14	11.32	3.810	4.14

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	18.19	11.18	3.842
2	18.19	11.32	3.810

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

```
PEAK FLOW RATE(CFS) = 18.19  Tc(MIN.) = 11.18
TOTAL AREA(ACRES) = 10.2
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2643.00 = 1100.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2643.00 TO NODE 2640.00 IS CODE = 31
-----
```

```
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1361.00  DOWNSTREAM(FEET) = 1356.00
FLOW LENGTH(FEET) = 200.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.89
ESTIMATED PIPE DIAMETER(INCH) = 21.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 18.19
PIPE TRAVEL TIME(MIN.) = 0.31  Tc(MIN.) = 11.49
LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2640.00 = 1300.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2640.00 TO NODE 2640.00 IS CODE = 1
-----
```

```
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.49
RAINFALL INTENSITY(INCH/HR) = 3.78
TOTAL STREAM AREA(ACRES) = 10.17
PEAK FLOW RATE(CFS) AT CONFLUENCE = 18.19
=====
```

```
*****
FLOW PROCESS FROM NODE 2642.00 TO NODE 2641.00 IS CODE = 21
-----
```

```
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 81.58
UPSTREAM ELEVATION(FEET) = 1378.00
DOWNSTREAM ELEVATION(FEET) = 1376.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.837
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.831
SUBAREA RUNOFF(CFS) = 0.48
TOTAL AREA(ACRES) = 0.22 TOTAL RUNOFF(CFS) = 0.48
=====
```

```
*****
FLOW PROCESS FROM NODE 2641.00 TO NODE 2640.00 IS CODE = 62
-----
```

```
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
```

```
UPSTREAM ELEVATION(FEET) = 1376.00 DOWNSTREAM ELEVATION(FEET) = 1362.00
STREET LENGTH(FEET) = 610.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
```

```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.98
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.29
HALFSTREET FLOOD WIDTH(FEET) = 8.78
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.26
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.95
STREET FLOW TRAVEL TIME(MIN.) = 3.12 Tc(MIN.) = 10.96
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.891
```

```
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4700
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.469
SUBAREA AREA(ACRES) = 5.99 SUBAREA RUNOFF(CFS) = 10.95
TOTAL AREA(ACRES) = 6.2 PEAK FLOW RATE(CFS) = 11.34
=====
```

```
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.35 HALFSTREET FLOOD WIDTH(FEET) = 11.66
FLOW VELOCITY(FEET/SEC.) = 3.76 DEPTH*VELOCITY(FT*FT/SEC.) = 1.32
LONGEST FLOWPATH FROM NODE 2642.00 TO NODE 2640.00 = 691.58 FEET.
```

 FLOW PROCESS FROM NODE 2640.00 TO NODE 2640.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.96
 RAINFALL INTENSITY(INCH/HR) = 3.89
 TOTAL STREAM AREA(ACRES) = 6.21
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.34

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	18.19	11.49	3.775	10.17
2	11.34	10.96	3.891	6.21

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	28.99	10.96	3.891
2	29.19	11.49	3.775

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 29.19 Tc(MIN.) = 11.49
 TOTAL AREA(ACRES) = 16.4
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2640.00 = 1300.00 FEET.

 FLOW PROCESS FROM NODE 2640.00 TO NODE 2639.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1362.00 DOWNSTREAM(FEET) = 1342.00
 FLOW LENGTH(FEET) = 210.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 19.80
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.19
 PIPE TRAVEL TIME(MIN.) = 0.18 Tc(MIN.) = 11.66
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2639.00 = 1510.00 FEET.

 FLOW PROCESS FROM NODE 2639.00 TO NODE 2638.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1342.00 DOWNSTREAM(FEET) = 1314.00
 FLOW LENGTH(FEET) = 380.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 18.44
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.19
 PIPE TRAVEL TIME(MIN.) = 0.34 Tc(MIN.) = 12.01
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2638.00 = 1890.00 FEET.

 FLOW PROCESS FROM NODE 2638.00 TO NODE 2637.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1314.00 DOWNSTREAM(FEET) = 1295.00
 FLOW LENGTH(FEET) = 380.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 21.0 INCH PIPE IS 15.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.74
 ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.19
 PIPE TRAVEL TIME(MIN.) = 0.40 Tc(MIN.) = 12.41
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2637.00 = 2270.00 FEET.

 FLOW PROCESS FROM NODE 2637.00 TO NODE 2636.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1295.00 DOWNSTREAM(FEET) = 1293.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 200.00 CHANNEL SLOPE = 0.0100
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.454
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 30.11
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.31
 AVERAGE FLOW DEPTH(FEET) = 1.26 TRAVEL TIME(MIN.) = 0.77
 Tc(MIN.) = 13.18
 SUBAREA AREA(ACRES) = 1.02 SUBAREA RUNOFF(CFS) = 1.83
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.468
 TOTAL AREA(ACRES) = 17.4 PEAK FLOW RATE(CFS) = 29.19

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 1.25 FLOW VELOCITY(FEET/SEC.) = 4.26
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2636.00 = 2470.00 FEET.

 FLOW PROCESS FROM NODE 2636.00 TO NODE 2635.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1293.00 DOWNSTREAM(FEET) = 1292.50
 FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.15
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.19
 PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 13.21
 LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2635.00 = 2490.00 FEET.

 FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

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** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	29.19	13.21	3.450	17.40

LONGEST FLOWPATH FROM NODE 2649.00 TO NODE 2635.00 = 2490.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	66.19	14.37	3.267	45.33

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2635.00 = 2545.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	90.03	13.21	3.450
2	93.83	14.37	3.267

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 93.83 Tc(MIN.) = 14.37
TOTAL AREA(ACRES) = 62.7

FLOW PROCESS FROM NODE 2635.00 TO NODE 2635.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2635.00 TO NODE 2631.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1292.50 DOWNSTREAM(Feet) = 1278.50
FLOW LENGTH(Feet) = 195.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 22.3 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 24.04
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 93.83
PIPE TRAVEL TIME(MIN.) = 0.14 Tc(MIN.) = 14.51
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2631.00 = 2740.00 FEET.

FLOW PROCESS FROM NODE 2631.00 TO NODE 2631.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.51
RAINFALL INTENSITY(INCH/HR) = 3.25
TOTAL STREAM AREA(ACRES) = 62.73
PEAK FLOW RATE(CFS) AT CONFLUENCE = 93.83

FLOW PROCESS FROM NODE 2634.00 TO NODE 2633.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0

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 INITIAL SUBAREA FLOW-LENGTH(FEET) = 50.00
 UPSTREAM ELEVATION(FEET) = 1435.00
 DOWNSTREAM ELEVATION(FEET) = 1405.00
 ELEVATION DIFFERENCE(FEET) = 30.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 4.431
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.455
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 0.16
 TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.16

 FLOW PROCESS FROM NODE 2633.00 TO NODE 2632.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1405.00	DOWNSTREAM(FEET) =	1285.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	540.00	CHANNEL SLOPE =	0.2222
CHANNEL BASE(FEET) =	3.00	"Z" FACTOR =	2.000
MANNING'S FACTOR =	0.030	MAXIMUM DEPTH(FEET) =	10.00
10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.939		

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.74
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 7.15
 AVERAGE FLOW DEPTH(FEET) = 0.20 TRAVEL TIME(MIN.) = 1.26
 Tc(MIN.) = 5.69
 SUBAREA AREA(ACRES) = 4.39 SUBAREA RUNOFF(CFS) = 9.13
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.350
 TOTAL AREA(ACRES) = 4.5 PEAK FLOW RATE(CFS) = 9.27

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.29 FLOW VELOCITY(FEET/SEC.) = 9.04
 LONGEST FLOWPATH FROM NODE 2634.00 TO NODE 2632.00 = 590.00 FEET.

 FLOW PROCESS FROM NODE 2632.00 TO NODE 2631.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1279.00	DOWNSTREAM(FEET) =	1278.50
FLOW LENGTH(FEET) =	50.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	13.7 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	6.41		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	9.27		
PIPE TRAVEL TIME(MIN.) =	0.13	Tc(MIN.) =	5.82
LONGEST FLOWPATH FROM NODE 2634.00 TO NODE 2631.00 =	640.00 FEET.		

 FLOW PROCESS FROM NODE 2631.00 TO NODE 2631.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	5.82
RAINFALL INTENSITY(INCH/HR) =	5.85
TOTAL STREAM AREA(ACRES) =	4.46

PEAK FLOW RATE(CFS) AT CONFLUENCE = P-26-10
9.27

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	93.83	14.51	3.248	62.73
2	9.27	5.82	5.853	4.46

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	46.92	5.82	5.853
2	98.98	14.51	3.248

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 98.98 Tc(MIN.) = 14.51

TOTAL AREA(ACRES) = 67.2

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2631.00 = 2740.00 FEET.

FLOW PROCESS FROM NODE 2631.00 TO NODE 2627.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1278.50 DOWNSTREAM(FEET) = 1253.00
FLOW LENGTH(FEET) = 600.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 33.0 INCH PIPE IS 25.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 19.83
ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 98.98
PIPE TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 15.01
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2627.00 = 3340.00 FEET.

FLOW PROCESS FROM NODE 2627.00 TO NODE 2627.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.01
RAINFALL INTENSITY(INCH/HR) = 3.18
TOTAL STREAM AREA(ACRES) = 67.19
PEAK FLOW RATE(CFS) AT CONFLUENCE = 98.98

FLOW PROCESS FROM NODE 2630.00 TO NODE 2629.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1390.00
DOWNSTREAM ELEVATION(FEET) = 1352.00
ELEVATION DIFFERENCE(FEET) = 38.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

```

                                P-26-10
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.147
    SUBAREA RUNOFF(CFS) = 0.23
    TOTAL AREA(ACRES) = 0.18    TOTAL RUNOFF(CFS) = 0.23

*****
    FLOW PROCESS FROM NODE 2629.00 TO NODE 2628.00 IS CODE = 51
-----
    >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
    >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
=====
    ELEVATION DATA: UPSTREAM(FEET) = 1352.00 DOWNSTREAM(FEET) = 1262.00
    CHANNEL LENGTH THRU SUBAREA(FEET) = 1370.00 CHANNEL SLOPE = 0.0657
    CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
    MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.461
    *USER SPECIFIED(SUBAREA):
    USER-SPECIFIED RUNOFF COEFFICIENT = .2500
    S.C.S. CURVE NUMBER (AMC II) = 0
    TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.29
    TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.78
    AVERAGE FLOW DEPTH(FEET) = 0.18 TRAVEL TIME(MIN.) = 6.04
    Tc(MIN.) = 13.14
    SUBAREA AREA(ACRES) = 4.60 SUBAREA RUNOFF(CFS) = 3.98
    AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
    TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 4.14

    END OF SUBAREA CHANNEL FLOW HYDRAULICS:
    DEPTH(FEET) = 0.26 FLOW VELOCITY(FEET/SEC.) = 4.59
    LONGEST FLOWPATH FROM NODE 2630.00 TO NODE 2628.00 = 1470.00 FEET.

*****
    FLOW PROCESS FROM NODE 2628.00 TO NODE 2627.00 IS CODE = 31
-----
    >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
    >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
    ELEVATION DATA: UPSTREAM(FEET) = 1256.00 DOWNSTREAM(FEET) = 1253.00
    FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
    ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
    DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
    PIPE-FLOW VELOCITY(FEET/SEC.) = 7.40
    ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
    PIPE-FLOW(CFS) = 4.14
    PIPE TRAVEL TIME(MIN.) = 0.28 Tc(MIN.) = 13.42
    LONGEST FLOWPATH FROM NODE 2630.00 TO NODE 2627.00 = 1595.00 FEET.

*****
    FLOW PROCESS FROM NODE 2627.00 TO NODE 2627.00 IS CODE = 1
-----
    >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
    >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
    TOTAL NUMBER OF STREAMS = 2
    CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
    TIME OF CONCENTRATION(MIN.) = 13.42
    RAINFALL INTENSITY(INCH/HR) = 3.41
    TOTAL STREAM AREA(ACRES) = 4.78
    PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.14

    ** CONFLUENCE DATA **
    STREAM RUNOFF Tc INTENSITY AREA
    NUMBER (CFS) (MIN.) (INCH/HOUR) (ACRE)
    1 98.98 15.01 3.177 67.19

```

2 4.14 13.42 P-26-10
 3.414 4.78

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	96.23	13.42	3.414
2	102.83	15.01	3.177

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 102.83 Tc(MIN.) = 15.01

TOTAL AREA(ACRES) = 72.0

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2627.00 = 3340.00 FEET.

FLOW PROCESS FROM NODE 2627.00 TO NODE 2623.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1253.00 DOWNSTREAM(FEET) = 1197.00

FLOW LENGTH(FEET) = 1335.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 36.0 INCH PIPE IS 24.2 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 20.34

ESTIMATED PIPE DIAMETER(INCH) = 36.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 102.83

PIPE TRAVEL TIME(MIN.) = 1.09 Tc(MIN.) = 16.10

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2623.00 = 4675.00 FEET.

FLOW PROCESS FROM NODE 2623.00 TO NODE 2623.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 16.10

RAINFALL INTENSITY(INCH/HR) = 3.04

TOTAL STREAM AREA(ACRES) = 71.97

PEAK FLOW RATE(CFS) AT CONFLUENCE = 102.83

FLOW PROCESS FROM NODE 2626.00 TO NODE 2625.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1330.00

DOWNSTREAM ELEVATION(FEET) = 1280.00

ELEVATION DIFFERENCE(FEET) = 50.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.352

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.532

SUBAREA RUNOFF(CFS) = 0.26

TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2625.00 TO NODE 2624.00 IS CODE = 51

 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1280.00 DOWNSTREAM(FEET) = 1207.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 440.00 CHANNEL SLOPE = 0.1659
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.903
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.08
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 5.61
 AVERAGE FLOW DEPTH(FEET) = 0.16 TRAVEL TIME(MIN.) = 1.31
 Tc(MIN.) = 7.66
 SUBAREA AREA(ACRES) = 4.59 SUBAREA RUNOFF(CFS) = 5.63
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.250
 TOTAL AREA(ACRES) = 4.8 PEAK FLOW RATE(CFS) = 5.86

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24 FLOW VELOCITY(FEET/SEC.) = 7.04
 LONGEST FLOWPATH FROM NODE 2626.00 TO NODE 2624.00 = 520.00 FEET.

 FLOW PROCESS FROM NODE 2624.00 TO NODE 2623.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1201.00 DOWNSTREAM(FEET) = 1197.00
 FLOW LENGTH(FEET) = 125.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 9.04
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 5.86
 PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 7.89
 LONGEST FLOWPATH FROM NODE 2626.00 TO NODE 2623.00 = 645.00 FEET.

 FLOW PROCESS FROM NODE 2623.00 TO NODE 2623.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.89
 RAINFALL INTENSITY(INCH/HR) = 4.81
 TOTAL STREAM AREA(ACRES) = 4.78
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.86

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	102.83	16.10	3.036	71.97
2	5.86	7.89	4.810	4.78

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	70.76	7.89	4.810
2	106.52	16.10	3.036

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 106.52 Tc(MIN.) = 16.10

TOTAL AREA(ACRES) = 76.8

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 2623.00 = 4675.00 FEET.

FLOW PROCESS FROM NODE 2623.00 TO NODE 287.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1196.00 DOWNSTREAM(FEET) = 1185.50

FLOW LENGTH(FEET) = 130.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 30.0 INCH PIPE IS 23.7 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 25.66

ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 106.52

PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 16.19

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 287.00 = 4805.00 FEET.

FLOW PROCESS FROM NODE 287.00 TO NODE 287.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2622.00 TO NODE 2621.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1435.00

DOWNSTREAM ELEVATION(FEET) = 1395.00

ELEVATION DIFFERENCE(FEET) = 40.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.580

SUBAREA RUNOFF(CFS) = 0.53

TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2621.00 TO NODE 2620.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1395.00 DOWNSTREAM(FEET) = 1275.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 645.00 CHANNEL SLOPE = 0.1860

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1530 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION

CHANNEL FLOW THRU SUBAREA(CFS) = 0.53

FLOW VELOCITY(FEET/SEC) = 2.19 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 4.91 Tc(MIN.) = 11.17


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LONGEST FLOWPATH FROM NODE    2622.00 TO NODE    2620.00 =    745.00 FEET.
*****
FLOW PROCESS FROM NODE    2621.00 TO NODE    2620.00 IS CODE =    81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =    3.843
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3400
S.C.S. CURVE NUMBER (AMC II) =    0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3407
SUBAREA AREA(ACRES) =    3.37    SUBAREA RUNOFF(CFS) =    4.40
TOTAL AREA(ACRES) =    3.6    TOTAL RUNOFF(CFS) =    4.77
TC(MIN.) =    11.17
*****
FLOW PROCESS FROM NODE    2620.00 TO NODE    2616.00 IS CODE =    31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1261.00    DOWNSTREAM(FEET) = 1231.00
FLOW LENGTH(FEET) =    380.00    MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS    5.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =    11.81
ESTIMATED PIPE DIAMETER(INCH) =    18.00    NUMBER OF PIPES =    1
PIPE-FLOW(CFS) =    4.77
PIPE TRAVEL TIME(MIN.) =    0.54    Tc(MIN.) =    11.71
LONGEST FLOWPATH FROM NODE    2622.00 TO NODE    2616.00 =    1125.00 FEET.
*****
FLOW PROCESS FROM NODE    2616.00 TO NODE    2616.00 IS CODE =    1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS =    2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM    1 ARE:
TIME OF CONCENTRATION(MIN.) =    11.71
RAINFALL INTENSITY(INCH/HR) =    3.73
TOTAL STREAM AREA(ACRES) =    3.64
PEAK FLOW RATE(CFS) AT CONFLUENCE =    4.77
*****
FLOW PROCESS FROM NODE    2619.00 TO NODE    2618.00 IS CODE =    21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) =    0
INITIAL SUBAREA FLOW-LENGTH(FEET) =    65.00
UPSTREAM ELEVATION(FEET) =    1249.00
DOWNSTREAM ELEVATION(FEET) =    1247.70
ELEVATION DIFFERENCE(FEET) =    1.30
SUBAREA OVERLAND TIME OF FLOW(MIN.) =    7.487
    10 YEAR RAINFALL INTENSITY(INCH/HOUR) =    4.975
SUBAREA RUNOFF(CFS) =    0.38
TOTAL AREA(ACRES) =    0.17    TOTAL RUNOFF(CFS) =    0.38
*****
FLOW PROCESS FROM NODE    2618.00 TO NODE    2617.00 IS CODE =    51

```

 >>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1247.70 DOWNSTREAM(FEET) = 1239.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 420.00 CHANNEL SLOPE = 0.0207
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.180
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.78
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 3.02
 AVERAGE FLOW DEPTH(FEET) = 0.34 TRAVEL TIME(MIN.) = 2.32
 Tc(MIN.) = 9.81
 SUBAREA AREA(ACRES) = 3.59 SUBAREA RUNOFF(CFS) = 6.75
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 TOTAL AREA(ACRES) = 3.8 PEAK FLOW RATE(CFS) = 7.07

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
 DEPTH(FEET) = 0.48 FLOW VELOCITY(FEET/SEC.) = 3.69
 LONGEST FLOWPATH FROM NODE 2619.00 TO NODE 2617.00 = 485.00 FEET.

 FLOW PROCESS FROM NODE 2617.00 TO NODE 2616.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1236.00 DOWNSTREAM(FEET) = 1231.00
 FLOW LENGTH(FEET) = 415.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.58
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.07
 PIPE TRAVEL TIME(MIN.) = 1.05 Tc(MIN.) = 10.86
 LONGEST FLOWPATH FROM NODE 2619.00 TO NODE 2616.00 = 900.00 FEET.

 FLOW PROCESS FROM NODE 2616.00 TO NODE 2616.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.86
 RAINFALL INTENSITY(INCH/HR) = 3.91
 TOTAL STREAM AREA(ACRES) = 3.76
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.07

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.77	11.71	3.728	3.64
2	7.07	10.86	3.915	3.76

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM	RUNOFF	Tc	INTENSITY

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NUMBER	(CFS)	(MIN.)	(INCH/HOUR)
1	11.49	10.86	3.915
2	11.50	11.71	3.728

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.50 Tc(MIN.) = 11.71

TOTAL AREA(ACRES) = 7.4

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.00 = 1125.00 FEET.

FLOW PROCESS FROM NODE 2616.00 TO NODE 2616.80 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1231.00 DOWNSTREAM(FEET) = 1223.00

FLOW LENGTH(FEET) = 540.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 7.81

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.50

PIPE TRAVEL TIME(MIN.) = 1.15 Tc(MIN.) = 12.86

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.80 = 1665.00 FEET.

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2611.00 TO NODE 2610.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1292.00

DOWNSTREAM ELEVATION(FEET) = 1290.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.880

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.254

SUBAREA RUNOFF(CFS) = 0.33

TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.33

FLOW PROCESS FROM NODE 2610.00 TO NODE 2609.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1290.00 DOWNSTREAM ELEVATION(FEET) = 1265.00

STREET LENGTH(FEET) = 435.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

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Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.43
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 6.28
AVERAGE FLOW VELOCITY(FT/SEC.) = 4.48
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.08
STREET FLOW TRAVEL TIME(MIN.) = 1.62 Tc(MIN.) = 8.50
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.585
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.482
SUBAREA AREA(ACRES) = 1.90 SUBAREA RUNOFF(CFS) = 4.18
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 4.47

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.53
FLOW VELOCITY(FT/SEC.) = 5.10 DEPTH*VELOCITY(FT*FT/SEC.) = 1.46
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2609.00 = 515.00 FEET.

FLOW PROCESS FROM NODE 2609.00 TO NODE 2606.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1259.00 DOWNSTREAM(FEET) = 1241.00
FLOW LENGTH(FEET) = 275.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.1 INCHES
PIPE-FLOW VELOCITY(FT/SEC.) = 10.84
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.47
PIPE TRAVEL TIME(MIN.) = 0.42 Tc(MIN.) = 8.92
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.20 = 790.00 FEET.

FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 8.92
RAINFALL INTENSITY(INCH/HR) = 4.44
TOTAL STREAM AREA(ACRES) = 2.02
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.47

FLOW PROCESS FROM NODE 2606.60 TO NODE 2606.40 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1267.00
DOWNSTREAM ELEVATION(FEET) = 1265.00
ELEVATION DIFFERENCE(FEET) = 2.00

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.29
 TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.29

FLOW PROCESS FROM NODE 2606.40 TO NODE 2606.20 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1265.00 DOWNSTREAM ELEVATION(FEET) = 1248.00
 STREET LENGTH(FEET) = 215.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.24
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.18
 HALFSTREET FLOOD WIDTH(FEET) = 3.28
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.85
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.88
 STREET FLOW TRAVEL TIME(MIN.) = 0.74 Tc(MIN.) = 8.45
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.602
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 0.92 SUBAREA RUNOFF(CFS) = 1.91
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 2.17

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.22 HALFSTREET FLOOD WIDTH(FEET) = 5.34
 FLOW VELOCITY(FEET/SEC.) = 5.02 DEPTH*VELOCITY(FT*FT/SEC.) = 1.12
 LONGEST FLOWPATH FROM NODE 2606.60 TO NODE 2606.20 = 295.00 FEET.

FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.20 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.45
 RAINFALL INTENSITY(INCH/HR) = 4.60
 TOTAL STREAM AREA(ACRES) = 1.05
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.17

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.47	8.92	4.444	2.02
2	2.17	8.45	4.602	1.05

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	6.41	8.45	4.602
2	6.57	8.92	4.444

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 6.57 Tc(MIN.) = 8.92
TOTAL AREA(ACRES) = 3.1
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.20 = 790.00 FEET.

FLOW PROCESS FROM NODE 2606.20 TO NODE 2606.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1242.00 DOWNSTREAM(FEET) = 1232.00
FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.63
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 6.57
PIPE TRAVEL TIME(MIN.) = 0.24 Tc(MIN.) = 9.16
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.00 = 960.00 FEET.

FLOW PROCESS FROM NODE 2606.00 TO NODE 2606.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.16
RAINFALL INTENSITY(INCH/HR) = 4.37
TOTAL STREAM AREA(ACRES) = 3.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.57

FLOW PROCESS FROM NODE 2608.00 TO NODE 2607.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1254.00
DOWNSTREAM ELEVATION(FEET) = 1252.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2607.00 TO NODE 2606.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<

UPSTREAM ELEVATION(FEET) = 1252.00 DOWNSTREAM ELEVATION(FEET) = 1238.00
 STREET LENGTH(FEET) = 170.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.93
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.16
 HALFSTREET FLOOD WIDTH(FEET) = 2.00
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.52
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.86
 STREET FLOW TRAVEL TIME(MIN.) = 0.51 Tc(MIN.) = 8.22
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.683
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 0.63 SUBAREA RUNOFF(CFS) = 1.33
 TOTAL AREA(ACRES) = 0.8 PEAK FLOW RATE(CFS) = 1.58

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.20 HALFSTREET FLOOD WIDTH(FEET) = 4.16
 FLOW VELOCITY(FEET/SEC.) = 4.94 DEPTH*VELOCITY(FT*FT/SEC.) = 0.98
 LONGEST FLOWPATH FROM NODE 2608.00 TO NODE 2606.00 = 250.00 FEET.

FLOW PROCESS FROM NODE 2606.00 TO NODE 2606.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.22
 RAINFALL INTENSITY(INCH/HR) = 4.68
 TOTAL STREAM AREA(ACRES) = 0.75
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.58

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.57	9.16	4.367	3.07
2	1.58	8.22	4.683	0.75

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.70	8.22	4.683
2	8.04	9.16	4.367

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 8.04 Tc(MIN.) = 9.16
TOTAL AREA(ACRES) = 3.8
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2606.00 = 960.00 FEET.

FLOW PROCESS FROM NODE 2606.00 TO NODE 2602.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1232.00 DOWNSTREAM(FEET) = 1226.00
FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.67
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.04
PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 9.40
LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2602.00 = 1110.00 FEET.

FLOW PROCESS FROM NODE 2602.00 TO NODE 2602.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 9.40
RAINFALL INTENSITY(INCH/HR) = 4.30
TOTAL STREAM AREA(ACRES) = 3.82
PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.04

FLOW PROCESS FROM NODE 2605.00 TO NODE 2604.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1244.00
DOWNSTREAM ELEVATION(FEET) = 1242.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2604.00 TO NODE 2602.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1242.00 DOWNSTREAM ELEVATION(FEET) = 1226.00
STREET LENGTH(FEET) = 495.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.12
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.25
 HALFSTREET FLOOD WIDTH(FEET) = 6.78
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.49
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.88
 STREET FLOW TRAVEL TIME(MIN.) = 2.36 Tc(MIN.) = 10.07
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.108
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.00 SUBAREA RUNOFF(CFS) = 3.70
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 3.92

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 9.22
 FLOW VELOCITY(FEET/SEC.) = 3.93 DEPTH*VELOCITY(FT*FT/SEC.) = 1.18
 LONGEST FLOWPATH FROM NODE 2605.00 TO NODE 2602.00 = 575.00 FEET.

 FLOW PROCESS FROM NODE 2602.00 TO NODE 2602.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.07
 RAINFALL INTENSITY(INCH/HR) = 4.11
 TOTAL STREAM AREA(ACRES) = 2.12
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.92

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.04	9.40	4.297	3.82
2	3.92	10.07	4.108	2.12

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.70	9.40	4.297
2	11.61	10.07	4.108

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 11.70 Tc(MIN.) = 9.40
 TOTAL AREA(ACRES) = 5.9
 LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2602.00 = 1110.00 FEET.

 FLOW PROCESS FROM NODE 2602.00 TO NODE 298.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<
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>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1226.00 DOWNSTREAM(FEET) = 1222.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 130.00 CHANNEL SLOPE = 0.0308
 CHANNEL BASE(FEET) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(FEET) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.173

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 11.90

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(FEET/SEC.) = 4.97

AVERAGE FLOW DEPTH(FEET) = 0.58 TRAVEL TIME(MIN.) = 0.44

Tc(MIN.) = 9.83

SUBAREA AREA(ACRES) = 0.22 SUBAREA RUNOFF(CFS) = 0.41

AREA-AVERAGE RUNOFF COEFFICIENT = 0.461

TOTAL AREA(ACRES) = 6.2 PEAK FLOW RATE(CFS) = 11.84

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(FEET) = 0.58 FLOW VELOCITY(FEET/SEC.) = 4.94

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 298.00 = 1240.00 FEET.

FLOW PROCESS FROM NODE 298.00 TO NODE 2616.80 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1216.00 DOWNSTREAM(FEET) = 1214.00

FLOW LENGTH(FEET) = 160.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 7.57

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.84

PIPE TRAVEL TIME(MIN.) = 0.35 Tc(MIN.) = 10.19

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2616.80 = 1400.00 FEET.

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 11

>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.84	10.19	4.079	6.16

LONGEST FLOWPATH FROM NODE 2611.00 TO NODE 2616.80 = 1400.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.50	12.86	3.509	7.40

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2616.80 = 1665.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.95	10.19	4.079
2	21.69	12.86	3.509

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.69 Tc(MIN.) = 12.86

TOTAL AREA(ACRES) = 13.6

FLOW PROCESS FROM NODE 2616.80 TO NODE 2616.80 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 2616.80 TO NODE 2612.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1214.00	DOWNSTREAM(FEET) =	1212.00
FLOW LENGTH(FEET) =	130.00	MANNING'S N =	0.013
DEPTH OF FLOW IN	24.0 INCH PIPE IS	16.5 INCHES	
PIPE-FLOW VELOCITY(FEET/SEC.) =	9.44		
ESTIMATED PIPE DIAMETER(INCH) =	24.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	21.69		
PIPE TRAVEL TIME(MIN.) =	0.23	Tc(MIN.) =	13.09
LONGEST FLOWPATH FROM NODE	2622.00 TO NODE	2612.00 =	1795.00 FEET.

FLOW PROCESS FROM NODE 2612.00 TO NODE 2612.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	13.09
RAINFALL INTENSITY(INCH/HR) =	3.47
TOTAL STREAM AREA(ACRES) =	13.56
PEAK FLOW RATE(CFS) AT CONFLUENCE =	21.69

FLOW PROCESS FROM NODE 2615.00 TO NODE 2614.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.2500
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	100.00
UPSTREAM ELEVATION(FEET) =	1275.00
DOWNSTREAM ELEVATION(FEET) =	1230.00
ELEVATION DIFFERENCE(FEET) =	45.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!	
10 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.147
SUBAREA RUNOFF(CFS) =	0.28
TOTAL AREA(ACRES) =	0.22
TOTAL RUNOFF(CFS) =	0.28

FLOW PROCESS FROM NODE 2614.00 TO NODE 2613.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1230.00	DOWNSTREAM(FEET) =	1219.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	260.00	CHANNEL SLOPE =	0.0423
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.0423 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		

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NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.28
 FLOW VELOCITY(FEET/SEC) = 1.15 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.76 Tc(MIN.) = 10.86
 LONGEST FLOWPATH FROM NODE 2615.00 TO NODE 2613.00 = 360.00 FEET.

FLOW PROCESS FROM NODE 2614.00 TO NODE 2613.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.913
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
 SUBAREA AREA(ACRES) = 0.67 SUBAREA RUNOFF(CFS) = 0.66
 TOTAL AREA(ACRES) = 0.9 TOTAL RUNOFF(CFS) = 0.87
 TC(MIN.) = 10.86

FLOW PROCESS FROM NODE 2613.00 TO NODE 2612.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1214.00 DOWNSTREAM(FEET) = 1212.00
 FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 2.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.65
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 0.87
 PIPE TRAVEL TIME(MIN.) = 0.15 Tc(MIN.) = 11.01
 LONGEST FLOWPATH FROM NODE 2615.00 TO NODE 2612.00 = 410.00 FEET.

FLOW PROCESS FROM NODE 2612.00 TO NODE 2612.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.01
 RAINFALL INTENSITY(INCH/HR) = 3.88
 TOTAL STREAM AREA(ACRES) = 0.89
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.87

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.69	13.09	3.469	13.56
2	0.87	11.01	3.879	0.89

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	19.11	11.01	3.879
2	22.47	13.09	3.469

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 22.47 Tc(MIN.) = 13.09

TOTAL AREA(ACRES) = 14.4

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 2612.00 = 1795.00 FEET.

FLOW PROCESS FROM NODE 2612.00 TO NODE 292.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1212.00 DOWNSTREAM(FEET) = 1196.00

FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 12.36

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 22.47

PIPE TRAVEL TIME(MIN.) = 0.69 Tc(MIN.) = 13.79

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 292.00 = 2310.00 FEET.

FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 297.00 TO NODE 296.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1236.00

DOWNSTREAM ELEVATION(FEET) = 1234.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882

SUBAREA RUNOFF(CFS) = 0.33

TOTAL AREA(ACRES) = 0.15 TOTAL RUNOFF(CFS) = 0.33

FLOW PROCESS FROM NODE 296.00 TO NODE 295.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1236.00 DOWNSTREAM ELEVATION(FEET) = 1215.00

STREET LENGTH(FEET) = 475.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

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**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =          2.88
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.26
HALFSTREET FLOOD WIDTH(FEET) = 7.34
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.20
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.10
STREET FLOW TRAVEL TIME(MIN.) = 1.89   Tc(MIN.) = 9.60
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.239
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.67   SUBAREA RUNOFF(CFS) = 5.09
TOTAL AREA(ACRES) = 2.8   PEAK FLOW RATE(CFS) = 5.38

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.31   HALFSTREET FLOOD WIDTH(FEET) = 9.91
FLOW VELOCITY(FEET/SEC.) = 4.77   DEPTH*VELOCITY(FT*FT/SEC.) = 1.50
LONGEST FLOWPATH FROM NODE 297.00 TO NODE 295.00 = 555.00 FEET.

*****
FLOW PROCESS FROM NODE 295.00 TO NODE 294.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1209.00   DOWNSTREAM(FEET) = 1206.00
FLOW LENGTH(FEET) = 125.00   MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.96
ESTIMATED PIPE DIAMETER(INCH) = 18.00   NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.38
PIPE TRAVEL TIME(MIN.) = 0.26   Tc(MIN.) = 9.86
LONGEST FLOWPATH FROM NODE 297.00 TO NODE 294.00 = 680.00 FEET.

*****
FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
=====

*****
FLOW PROCESS FROM NODE 294.90 TO NODE 294.80 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1245.00
DOWNSTREAM ELEVATION(FEET) = 1243.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.31
TOTAL AREA(ACRES) = 0.14   TOTAL RUNOFF(CFS) = 0.31

*****
FLOW PROCESS FROM NODE 294.80 TO NODE 294.70 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

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>>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1243.00 DOWNSTREAM ELEVATION(FEET) = 1238.00
 STREET LENGTH(FEET) = 270.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.35
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.19
 HALFSTREET FLOOD WIDTH(FEET) = 3.72
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.35
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.45
 STREET FLOW TRAVEL TIME(MIN.) = 1.91 Tc(MIN.) = 9.62
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.232
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 1.09 SUBAREA RUNOFF(CFS) = 2.08
 TOTAL AREA(ACRES) = 1.2 PEAK FLOW RATE(CFS) = 2.34

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.23 HALFSTREET FLOOD WIDTH(FEET) = 5.72
 FLOW VELOCITY(FEET/SEC.) = 2.47 DEPTH*VELOCITY(FT*FT/SEC.) = 0.57
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.70 = 350.00 FEET.

 FLOW PROCESS FROM NODE 294.70 TO NODE 294.10 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1236.00 DOWNSTREAM(FEET) = 1223.00
 FLOW LENGTH(FEET) = 605.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.06
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 2.34
 PIPE TRAVEL TIME(MIN.) = 1.66 Tc(MIN.) = 11.29
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.10 = 955.00 FEET.

 FLOW PROCESS FROM NODE 294.10 TO NODE 294.10 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.29
 RAINFALL INTENSITY(INCH/HR) = 3.82
 TOTAL STREAM AREA(ACRES) = 1.23
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.34

 FLOW PROCESS FROM NODE 294.60 TO NODE 294.50 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1236.00
 DOWNSTREAM ELEVATION(FEET) = 1234.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.22
 TOTAL AREA(ACRES) = 0.10 TOTAL RUNOFF(CFS) = 0.22

 FLOW PROCESS FROM NODE 294.50 TO NODE 294.40 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1234.00 DOWNSTREAM ELEVATION(FEET) = 1233.00
 STREET LENGTH(FEET) = 100.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.13
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.20
 HALFSTREET FLOOD WIDTH(FEET) = 4.22
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 1.73
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.35
 STREET FLOW TRAVEL TIME(MIN.) = 0.96 Tc(MIN.) = 8.67
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.525

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 0.89 SUBAREA RUNOFF(CFS) = 1.81
 TOTAL AREA(ACRES) = 1.0 PEAK FLOW RATE(CFS) = 2.02

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.24 HALFSTREET FLOOD WIDTH(FEET) = 6.22
 FLOW VELOCITY(FEET/SEC.) = 1.89 DEPTH*VELOCITY(FT*FT/SEC.) = 0.45
 LONGEST FLOWPATH FROM NODE 294.60 TO NODE 294.40 = 180.00 FEET.

 FLOW PROCESS FROM NODE 294.40 TO NODE 294.10 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1227.00 DOWNSTREAM(FEET) = 1223.00


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FLOW LENGTH(FEET) = 350.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 4.63
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 2.02
PIPE TRAVEL TIME(MIN.) = 1.26  Tc(MIN.) = 9.93
LONGEST FLOWPATH FROM NODE 294.60 TO NODE 294.10 = 530.00 FEET.

*****
FLOW PROCESS FROM NODE 294.10 TO NODE 294.10 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.93
RAINFALL INTENSITY(INCH/HR) = 4.15
TOTAL STREAM AREA(ACRES) = 0.99
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.02

** CONFLUENCE DATA **
STREAM      RUNOFF      Tc      INTENSITY      AREA
NUMBER      (CFS)      (MIN.)  (INCH/HOUR)  (ACRE)
  1          2.34      11.29      3.818        1.23
  2          2.02       9.93      4.146        0.99

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **
STREAM      RUNOFF      Tc      INTENSITY
NUMBER      (CFS)      (MIN.)  (INCH/HOUR)
  1          4.08       9.93      4.146
  2          4.20      11.29      3.818

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 4.20  Tc(MIN.) = 11.29
TOTAL AREA(ACRES) = 2.2
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.10 = 955.00 FEET.

*****
FLOW PROCESS FROM NODE 294.10 TO NODE 294.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1223.00  DOWNSTREAM(FEET) = 1204.00
FLOW LENGTH(FEET) = 750.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.58
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.20
PIPE TRAVEL TIME(MIN.) = 1.65  Tc(MIN.) = 12.94
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.00 = 1705.00 FEET.

*****
FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 11
-----
>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<
=====

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** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.20	12.94	3.496	2.22

LONGEST FLOWPATH FROM NODE 294.90 TO NODE 294.00 = 1705.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.38	9.86	4.166	2.82

LONGEST FLOWPATH FROM NODE 297.00 TO NODE 294.00 = 680.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	8.58	9.86	4.166
2	8.71	12.94	3.496

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 8.71 Tc(MIN.) = 12.94
 TOTAL AREA(ACRES) = 5.0

FLOW PROCESS FROM NODE 294.00 TO NODE 294.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 294.00 TO NODE 293.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1204.00 DOWNSTREAM(Feet) = 1200.00
 FLOW LENGTH(Feet) = 150.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.4 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 9.37
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 8.71
 PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 13.20
 LONGEST FLOWPATH FROM NODE 294.90 TO NODE 293.50 = 1855.00 FEET.

FLOW PROCESS FROM NODE 293.50 TO NODE 293.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1200.00 DOWNSTREAM(Feet) = 1199.00
 CHANNEL LENGTH THRU SUBAREA(Feet) = 100.00 CHANNEL SLOPE = 0.0100
 CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
 MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.362
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 8.87
 TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 3.06
 AVERAGE FLOW DEPTH(Feet) = 0.67 TRAVEL TIME(MIN.) = 0.54
 Tc(MIN.) = 13.75

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SUBAREA AREA(ACRES) = 0.21 SUBAREA RUNOFF(CFS) = 0.32
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
TOTAL AREA(ACRES) = 5.2 PEAK FLOW RATE(CFS) = 8.71

END OF SUBAREA CHANNEL FLOW HYDRAULICS:
DEPTH(FEET) = 0.66 FLOW VELOCITY(FEET/SEC.) = 3.05
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 293.00 = 1955.00 FEET.

FLOW PROCESS FROM NODE 293.00 TO NODE 292.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1199.00 DOWNSTREAM(FEET) = 1196.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.66
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.71
PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 13.81
LONGEST FLOWPATH FROM NODE 294.90 TO NODE 292.00 = 2005.00 FEET.

FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.71	13.81	3.352	5.25

LONGEST FLOWPATH FROM NODE 294.90 TO NODE 292.00 = 2005.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	22.47	13.79	3.356	14.45

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 292.00 = 2310.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	31.16	13.79	3.356
2	31.15	13.81	3.352

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 31.16 Tc(MIN.) = 13.79
TOTAL AREA(ACRES) = 19.7

FLOW PROCESS FROM NODE 292.00 TO NODE 292.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 292.00 TO NODE 288.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1196.00  DOWNSTREAM(FEET) = 1189.00
FLOW LENGTH(FEET) = 270.00  MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 17.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 12.45
ESTIMATED PIPE DIAMETER(INCH) = 24.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 31.16
PIPE TRAVEL TIME(MIN.) = 0.36  Tc(MIN.) = 14.15
LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 288.00 = 2580.00 FEET.

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*****
FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1
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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.15
RAINFALL INTENSITY(INCH/HR) = 3.30
TOTAL STREAM AREA(ACRES) = 19.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 31.16

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*****
FLOW PROCESS FROM NODE 291.00 TO NODE 290.00 IS CODE = 21
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>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
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*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1300.00
DOWNSTREAM ELEVATION(FEET) = 1270.00
ELEVATION DIFFERENCE(FEET) = 30.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.147
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.20  TOTAL RUNOFF(CFS) = 0.26

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*****
FLOW PROCESS FROM NODE 290.00 TO NODE 289.00 IS CODE = 52
-----

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>>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====

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ELEVATION DATA: UPSTREAM(FEET) = 1270.00  DOWNSTREAM(FEET) = 1195.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 840.00  CHANNEL SLOPE = 0.0893
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.26
FLOW VELOCITY(FEET/SEC) = 4.48 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.12  Tc(MIN.) = 10.23
LONGEST FLOWPATH FROM NODE 291.00 TO NODE 289.00 = 940.00 FEET.

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*****
FLOW PROCESS FROM NODE 290.00 TO NODE 289.00 IS CODE = 81
-----

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>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====

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10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.069
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0

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AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
 SUBAREA AREA(ACRES) = 2.84 SUBAREA RUNOFF(CFS) = 2.89
 TOTAL AREA(ACRES) = 3.0 TOTAL RUNOFF(CFS) = 3.09
 TC(MIN.) = 10.23

FLOW PROCESS FROM NODE 289.00 TO NODE 288.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1189.00 DOWNSTREAM(FEET) = 1187.00
 FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 5.27
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.09
 PIPE TRAVEL TIME(MIN.) = 0.54 Tc(MIN.) = 10.76
 LONGEST FLOWPATH FROM NODE 291.00 TO NODE 288.00 = 1110.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 288.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.76
 RAINFALL INTENSITY(INCH/HR) = 3.94
 TOTAL STREAM AREA(ACRES) = 3.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.09

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	31.16	14.15	3.300	19.70
2	3.09	10.76	3.937	3.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.80	10.76	3.937
2	33.76	14.15	3.300

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 33.76 Tc(MIN.) = 14.15
 TOTAL AREA(ACRES) = 22.7
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 288.00 = 2580.00 FEET.

FLOW PROCESS FROM NODE 288.00 TO NODE 287.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1187.00 DOWNSTREAM(FEET) = 1185.50
 FLOW LENGTH(FEET) = 275.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 33.0 INCH PIPE IS 24.7 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 7.07
 ESTIMATED PIPE DIAMETER(INCH) = 33.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 33.76
 PIPE TRAVEL TIME(MIN.) = 0.65 Tc(MIN.) = 14.80
 LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 287.00 = 2855.00 FEET.

 FLOW PROCESS FROM NODE 287.00 TO NODE 287.00 IS CODE = 11

 >>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<
 =====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	33.76	14.80	3.206	22.74

LONGEST FLOWPATH FROM NODE 2622.00 TO NODE 287.00 = 2855.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	106.52	16.19	3.026	76.75

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 287.00 = 4805.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	131.12	14.80	3.206
2	138.38	16.19	3.026

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 138.38 Tc(MIN.) = 16.19
 TOTAL AREA(ACRES) = 99.5

 FLOW PROCESS FROM NODE 287.00 TO NODE 287.00 IS CODE = 12

 >>>>>CLEAR MEMORY BANK # 1 <<<<<
 =====

 FLOW PROCESS FROM NODE 287.00 TO NODE 246.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1185.50 DOWNSTREAM(FEET) = 1178.00
 FLOW LENGTH(FEET) = 480.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 45.0 INCH PIPE IS 35.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 14.79
 ESTIMATED PIPE DIAMETER(INCH) = 45.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 138.38
 PIPE TRAVEL TIME(MIN.) = 0.54 Tc(MIN.) = 16.73
 LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 246.00 = 5285.00 FEET.

 FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 10

 >>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<
 =====

 FLOW PROCESS FROM NODE 286.00 TO NODE 285.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1218.00
 DOWNSTREAM ELEVATION(FEET) = 1216.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.29
 TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.29

 FLOW PROCESS FROM NODE 285.00 TO NODE 284.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1216.00 DOWNSTREAM ELEVATION(FEET) = 1203.00
 STREET LENGTH(FEET) = 380.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.95
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.27
 HALFSTREET FLOOD WIDTH(FEET) = 7.91
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.81
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.05
 STREET FLOW TRAVEL TIME(MIN.) = 1.66 Tc(MIN.) = 9.37
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.305

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.74 SUBAREA RUNOFF(CFS) = 5.31
 TOTAL AREA(ACRES) = 2.9 PEAK FLOW RATE(CFS) = 5.56

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.33 HALFSTREET FLOOD WIDTH(FEET) = 10.59
 FLOW VELOCITY(FEET/SEC.) = 4.38 DEPTH*VELOCITY(FT*FT/SEC.) = 1.44
 LONGEST FLOWPATH FROM NODE 286.00 TO NODE 284.00 = 460.00 FEET.

 FLOW PROCESS FROM NODE 284.00 TO NODE 259.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1197.00 DOWNSTREAM(FEET) = 1195.00
 FLOW LENGTH(FEET) = 180.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

```

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DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.03
ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.56
PIPE TRAVEL TIME(MIN.) = 0.50    Tc(MIN.) = 9.87
LONGEST FLOWPATH FROM NODE 286.00 TO NODE 259.00 = 640.00 FEET.

*****
FLOW PROCESS FROM NODE 259.00 TO NODE 259.00 IS CODE = 10
-----
>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
=====

*****
FLOW PROCESS FROM NODE 283.00 TO NODE 282.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4600
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1268.00
DOWNSTREAM ELEVATION(FEET) = 1266.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.592
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.931
SUBAREA RUNOFF(CFS) = 0.52
TOTAL AREA(ACRES) = 0.23    TOTAL RUNOFF(CFS) = 0.52

*****
FLOW PROCESS FROM NODE 282.00 TO NODE 281.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1266.00    DOWNSTREAM ELEVATION(FEET) = 1262.00
STREET LENGTH(FEET) = 220.00    CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.57
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.24
HALFSTREET FLOOD WIDTH(FEET) = 6.03
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.51
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.59
STREET FLOW TRAVEL TIME(MIN.) = 1.46    Tc(MIN.) = 9.05
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.401
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.451
SUBAREA AREA(ACRES) = 2.06    SUBAREA RUNOFF(CFS) = 4.08
TOTAL AREA(ACRES) = 2.3    PEAK FLOW RATE(CFS) = 4.55

```


END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(Feet) = 0.28 HALFSTREET FLOOD WIDTH(Feet) = 8.16
 FLOW VELOCITY(Feet/Sec.) = 2.80 DEPTH*VELOCITY(Ft*Ft/Sec.) = 0.78
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 281.00 = 300.00 FEET.

FLOW PROCESS FROM NODE 281.00 TO NODE 280.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1256.00 DOWNSTREAM(Feet) = 1241.00
 FLOW LENGTH(Feet) = 270.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.4 INCHES
 PIPE-FLOW VELOCITY(Feet/Sec.) = 10.28
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 4.55
 PIPE TRAVEL TIME(Min.) = 0.44 Tc(Min.) = 9.49
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 280.60 = 570.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 280.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(Min.) = 9.49
 RAINFALL INTENSITY(INCH/HR) = 4.27
 TOTAL STREAM AREA(ACRES) = 2.29
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.55

FLOW PROCESS FROM NODE 280.90 TO NODE 280.80 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(Feet) = 80.00
 UPSTREAM ELEVATION(Feet) = 1269.00
 DOWNSTREAM ELEVATION(Feet) = 1266.00
 ELEVATION DIFFERENCE(Feet) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(Min.) = 6.736
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.326
 SUBAREA RUNOFF(CFS) = 0.38
 TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.38

FLOW PROCESS FROM NODE 280.80 TO NODE 280.70 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(Feet) = 1266.00 DOWNSTREAM ELEVATION(Feet) = 1248.00
 STREET LENGTH(Feet) = 300.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(Feet) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(Feet) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020

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OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 0.99
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.17
HALFSTREET FLOOD WIDTH(FEET) = 2.84
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.33
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.75
STREET FLOW TRAVEL TIME(MIN.) = 1.15 Tc(MIN.) = 7.89
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.809
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 0.56 SUBAREA RUNOFF(CFS) = 1.21
TOTAL AREA(ACRES) = 0.7 PEAK FLOW RATE(CFS) = 1.56

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.66
FLOW VELOCITY(FEET/SEC.) = 4.28 DEPTH*VELOCITY(FT*FT/SEC.) = 0.90
LONGEST FLOWPATH FROM NODE 280.90 TO NODE 280.70 = 380.00 FEET.

FLOW PROCESS FROM NODE 280.70 TO NODE 280.60 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1242.00 DOWNSTREAM(FEET) = 1241.00
FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 5.69
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 1.56
PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 8.01
LONGEST FLOWPATH FROM NODE 280.90 TO NODE 280.60 = 420.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 280.60 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 8.01
RAINFALL INTENSITY(INCH/HR) = 4.76
TOTAL STREAM AREA(ACRES) = 0.72
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.56

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.55	9.49	4.269	2.29
2	1.56	8.01	4.764	0.72

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	5.39	8.01	4.764
2	5.94	9.49	4.269

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 5.94 Tc(MIN.) = 9.49

TOTAL AREA(ACRES) = 3.0

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 280.60 = 570.00 FEET.

FLOW PROCESS FROM NODE 280.60 TO NODE 277.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1241.00 DOWNSTREAM(FEET) = 1238.00

FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 10.09

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 5.94

PIPE TRAVEL TIME(MIN.) = 0.12 Tc(MIN.) = 9.61

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 277.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.61

RAINFALL INTENSITY(INCH/HR) = 4.24

TOTAL STREAM AREA(ACRES) = 3.01

PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.94

FLOW PROCESS FROM NODE 280.00 TO NODE 279.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1257.00

DOWNSTREAM ELEVATION(FEET) = 1255.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882

SUBAREA RUNOFF(CFS) = 0.53

TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 279.00 TO NODE 278.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

```
=====
UPSTREAM ELEVATION(FEET) = 1255.00  DOWNSTREAM ELEVATION(FEET) = 1244.00
STREET LENGTH(FEET) = 340.00  CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00
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```
DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020
```

```
SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150
```

```
**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.02
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.23
HALFSTREET FLOOD WIDTH(FEET) = 5.59
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.28
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.75
STREET FLOW TRAVEL TIME(MIN.) = 1.73  Tc(MIN.) = 9.44
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.285
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.58  SUBAREA RUNOFF(CFS) = 4.97
TOTAL AREA(ACRES) = 2.8  PEAK FLOW RATE(CFS) = 5.44
```

```
END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.27  HALFSTREET FLOOD WIDTH(FEET) = 7.72
FLOW VELOCITY(FEET/SEC.) = 3.66  DEPTH*VELOCITY(FT*FT/SEC.) = 0.99
LONGEST FLOWPATH FROM NODE 280.00 TO NODE 278.00 = 420.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 278.00 TO NODE 277.00 IS CODE = 31
```

```
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
```

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1239.00  DOWNSTREAM(FEET) = 1238.00
FLOW LENGTH(FEET) = 50.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.46
ESTIMATED PIPE DIAMETER(INCH) = 18.00  NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.44
PIPE TRAVEL TIME(MIN.) = 0.11  Tc(MIN.) = 9.55
LONGEST FLOWPATH FROM NODE 280.00 TO NODE 277.00 = 470.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 277.00 TO NODE 277.00 IS CODE = 1
```

```
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
```

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.55
RAINFALL INTENSITY(INCH/HR) = 4.25
TOTAL STREAM AREA(ACRES) = 2.82
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.44
```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.94	9.61	4.236	3.01
2	5.44	9.55	4.252	2.82

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.36	9.55	4.252
2	11.36	9.61	4.236

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.36 Tc(MIN.) = 9.61

TOTAL AREA(ACRES) = 5.8

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 277.00 = 640.00 FEET.

FLOW PROCESS FROM NODE 277.00 TO NODE 275.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1238.00 DOWNSTREAM(FEET) = 1228.00

FLOW LENGTH(FEET) = 180.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 13.18

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.36

PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 9.83

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 275.00 = 820.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 275.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.83

RAINFALL INTENSITY(INCH/HR) = 4.17

TOTAL STREAM AREA(ACRES) = 5.83

PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.36

FLOW PROCESS FROM NODE 275.30 TO NODE 275.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .4500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1247.00

DOWNSTREAM ELEVATION(FEET) = 1243.00

ELEVATION DIFFERENCE(FEET) = 4.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.120

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.666

SUBAREA RUNOFF(CFS) = 0.36

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TOTAL AREA(ACRES) =      0.14    TOTAL RUNOFF(CFS) =      0.36
*****
FLOW PROCESS FROM NODE      275.20 TO NODE      275.10 IS CODE =  62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION #  1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1243.00  DOWNSTREAM ELEVATION(FEET) = 1235.00
STREET LENGTH(FEET) =   165.00  CURB HEIGHT(INCHES) =   6.0
STREET HALFWIDTH(FEET) =   18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =   8.00
INSIDE STREET CROSSFALL(DECIMAL) =   0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =   0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =   1
STREET PARKWAY CROSSFALL(DECIMAL) =   0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =   0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section =   0.0150

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) =      0.70
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) =   0.16
  HALFSTREET FLOOD WIDTH(FEET) =   2.00
  AVERAGE FLOW VELOCITY(FEET/SEC.) =   4.24
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) =   0.66
  STREET FLOW TRAVEL TIME(MIN.) =   0.65  Tc(MIN.) =   6.77
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) =   5.309
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) =   0
AREA-AVERAGE RUNOFF COEFFICIENT =   0.450
SUBAREA AREA(ACRES) =   0.29    SUBAREA RUNOFF(CFS) =   0.69
TOTAL AREA(ACRES) =   0.4    PEAK FLOW RATE(CFS) =   1.03

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.19  HALFSTREET FLOOD WIDTH(FEET) =   3.53
FLOW VELOCITY(FEET/SEC.) = 3.77  DEPTH*VELOCITY(FT*FT/SEC.) =   0.71
LONGEST FLOWPATH FROM NODE      275.30 TO NODE      275.10 =   245.00 FEET.
*****
FLOW PROCESS FROM NODE      275.10 TO NODE      275.00 IS CODE =  31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1229.00  DOWNSTREAM(FEET) = 1228.00
FLOW LENGTH(FEET) =   40.00  MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS   3.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) =   5.03
ESTIMATED PIPE DIAMETER(INCH) = 18.00    NUMBER OF PIPES =   1
PIPE-FLOW(CFS) =   1.03
PIPE TRAVEL TIME(MIN.) =   0.13  Tc(MIN.) =   6.90
LONGEST FLOWPATH FROM NODE      275.30 TO NODE      275.00 =   285.00 FEET.
*****
FLOW PROCESS FROM NODE      275.00 TO NODE      275.00 IS CODE =   1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

```

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TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 6.90
RAINFALL INTENSITY(INCH/HR) = 5.24
TOTAL STREAM AREA(ACRES) = 0.43
PEAK FLOW RATE(CFS) AT CONFLUENCE = 1.03

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.36	9.83	4.173	5.83
2	1.03	6.90	5.243	0.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.07	6.90	5.243
2	12.18	9.83	4.173

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 12.18 Tc(MIN.) = 9.83
TOTAL AREA(ACRES) = 6.3
LONGEST FLOWPATH FROM NODE 283.00 TO NODE 275.00 = 820.00 FEET.

FLOW PROCESS FROM NODE 275.00 TO NODE 293.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1228.00	DOWNSTREAM(FEET) =	1218.00
FLOW LENGTH(FEET) =	330.00	MANNING'S N =	0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS	11.1 INCHES		
PIPE-FLOW VELOCITY(FEET/SEC.) =	10.63		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	12.18		
PIPE TRAVEL TIME(MIN.) =	0.52	Tc(MIN.) =	10.35
LONGEST FLOWPATH FROM NODE	283.00	TO NODE	293.20 = 1150.00 FEET.

FLOW PROCESS FROM NODE 293.20 TO NODE 293.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.35
RAINFALL INTENSITY(INCH/HR) = 4.04
TOTAL STREAM AREA(ACRES) = 6.26
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.18

FLOW PROCESS FROM NODE 293.80 TO NODE 293.60 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

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UPSTREAM ELEVATION(FEET) = 1236.00
 DOWNSTREAM ELEVATION(FEET) = 1234.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.24
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.24

FLOW PROCESS FROM NODE 293.60 TO NODE 293.40 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1234.00 DOWNSTREAM ELEVATION(FEET) = 1224.00
 STREET LENGTH(FEET) = 390.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.04
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.26
 HALFSTREET FLOOD WIDTH(FEET) = 7.09
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.13
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.81
 STREET FLOW TRAVEL TIME(MIN.) = 2.08 Tc(MIN.) = 9.79
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.186

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 1.90 SUBAREA RUNOFF(CFS) = 3.58
 TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 3.79

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.31 HALFSTREET FLOOD WIDTH(FEET) = 9.53
 FLOW VELOCITY(FEET/SEC.) = 3.59 DEPTH*VELOCITY(FT*FT/SEC.) = 1.10
 LONGEST FLOWPATH FROM NODE 293.80 TO NODE 293.40 = 470.00 FEET.

FLOW PROCESS FROM NODE 293.40 TO NODE 293.20 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1219.00 DOWNSTREAM(FEET) = 1218.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.33
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.79
 PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 9.88
 LONGEST FLOWPATH FROM NODE 293.80 TO NODE 293.20 = 510.00 FEET.

 FLOW PROCESS FROM NODE 293.20 TO NODE 293.20 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.88
 RAINFALL INTENSITY(INCH/HR) = 4.16
 TOTAL STREAM AREA(ACRES) = 2.01
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.79

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.18	10.35	4.037	6.26
2	3.79	9.88	4.161	2.01

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	15.60	9.88	4.161
2	15.85	10.35	4.037

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 15.85 Tc(MIN.) = 10.35
 TOTAL AREA(ACRES) = 8.3
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 293.20 = 1150.00 FEET.

 FLOW PROCESS FROM NODE 293.20 TO NODE 264.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1218.00 DOWNSTREAM(FEET) = 1216.00
 FLOW LENGTH(FEET) = 45.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.7 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 13.06
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 15.85
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.41
 LONGEST FLOWPATH FROM NODE 283.00 TO NODE 264.00 = 1195.00 FEET.

 FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 10

>>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 3 <<<<<
 =====

 FLOW PROCESS FROM NODE 272.00 TO NODE 271.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

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UPSTREAM ELEVATION(FEET) = 1246.00
DOWNSTREAM ELEVATION(FEET) = 1244.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.15
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.15
*****
FLOW PROCESS FROM NODE 271.00 TO NODE 270.00 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1244.00 DOWNSTREAM ELEVATION(FEET) = 1233.00
STREET LENGTH(FEET) = 850.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

  **TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.21
  STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
  STREET FLOW DEPTH(FEET) = 0.24
  HALFSTREET FLOOD WIDTH(FEET) = 6.09
  AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.13
  PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.51
  STREET FLOW TRAVEL TIME(MIN.) = 6.66 Tc(MIN.) = 14.37
  10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.267
  *USER SPECIFIED(SUBAREA):
  USER-SPECIFIED RUNOFF COEFFICIENT = .4500
  S.C.S. CURVE NUMBER (AMC II) = 0
  AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
  SUBAREA AREA(ACRES) = 2.74 SUBAREA RUNOFF(CFS) = 4.03
  TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 4.13

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.29 HALFSTREET FLOOD WIDTH(FEET) = 8.47
FLOW VELOCITY(FEET/SEC.) = 2.39 DEPTH*VELOCITY(FT*FT/SEC.) = 0.68
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 270.00 = 930.00 FEET.
*****
FLOW PROCESS FROM NODE 270.00 TO NODE 265.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1227.00 DOWNSTREAM(FEET) = 1217.00
FLOW LENGTH(FEET) = 560.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.65
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.13
PIPE TRAVEL TIME(MIN.) = 1.40 Tc(MIN.) = 15.77
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 265.00 = 1490.00 FEET.

```

FLOW PROCESS FROM NODE 265.00 TO NODE 265.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 15.77
 RAINFALL INTENSITY(INCH/HR) = 3.08
 TOTAL STREAM AREA(ACRES) = 2.81
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.13

FLOW PROCESS FROM NODE 269.00 TO NODE 268.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1235.00
 DOWNSTREAM ELEVATION(FEET) = 1233.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.24
 TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.24

FLOW PROCESS FROM NODE 268.00 TO NODE 265.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1233.00 DOWNSTREAM ELEVATION(FEET) = 1222.00
 STREET LENGTH(FEET) = 520.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.45
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.23
 HALFSTREET FLOOD WIDTH(FEET) = 5.59
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.66
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.61
 STREET FLOW TRAVEL TIME(MIN.) = 3.26 Tc(MIN.) = 10.97
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.889
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 2.51 SUBAREA RUNOFF(CFS) = 4.39
 TOTAL AREA(ACRES) = 2.6 PEAK FLOW RATE(CFS) = 4.58

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END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.27 HALFSTREET FLOOD WIDTH(FEET) = 7.91
FLOW VELOCITY(FEET/SEC.) = 2.97 DEPTH*VELOCITY(FT*FT/SEC.) = 0.81
LONGEST FLOWPATH FROM NODE 269.00 TO NODE 265.00 = 600.00 FEET.

FLOW PROCESS FROM NODE 265.00 TO NODE 265.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.97
RAINFALL INTENSITY(INCH/HR) = 3.89
TOTAL STREAM AREA(ACRES) = 2.62
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.58

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	4.13	15.77	3.076	2.81
2	4.58	10.97	3.889	2.62

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	7.46	10.97	3.889
2	7.76	15.77	3.076

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 7.76 Tc(MIN.) = 15.77
TOTAL AREA(ACRES) = 5.4
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 265.00 = 1490.00 FEET.

FLOW PROCESS FROM NODE 265.00 TO NODE 264.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1217.00 DOWNSTREAM(FEET) = 1216.00
FLOW LENGTH(FEET) = 70.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 18.0 INCH PIPE IS 10.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 7.18
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 7.76
PIPE TRAVEL TIME(MIN.) = 0.16 Tc(MIN.) = 15.94
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 264.00 = 1560.00 FEET.

FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 3 WITH THE MAIN-STREAM MEMORY<<<<<

=====

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.76	15.94	3.056	5.43

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LONGEST FLOWPATH FROM NODE 272.00 TO NODE 264.00 = 1560.00 FEET.

** MEMORY BANK # 3 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	15.85	10.41	4.023	8.27

LONGEST FLOWPATH FROM NODE 283.00 TO NODE 264.00 = 1195.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.92	10.41	4.023
2	19.80	15.94	3.056

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.92 Tc(MIN.) = 10.41
TOTAL AREA(ACRES) = 13.7

FLOW PROCESS FROM NODE 264.00 TO NODE 264.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 3 <<<<<

FLOW PROCESS FROM NODE 264.00 TO NODE 260.40 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1216.00 DOWNSTREAM(FEET) = 1201.00
FLOW LENGTH(FEET) = 515.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 21.0 INCH PIPE IS 14.4 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.89
ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 20.92
PIPE TRAVEL TIME(MIN.) = 0.72 Tc(MIN.) = 11.13
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.40 = 2075.00 FEET.

FLOW PROCESS FROM NODE 260.40 TO NODE 260.40 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.13
RAINFALL INTENSITY(INCH/HR) = 3.85
TOTAL STREAM AREA(ACRES) = 13.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 20.92

FLOW PROCESS FROM NODE 260.70 TO NODE 260.60 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1230.00
DOWNSTREAM ELEVATION(FEET) = 1228.00
ELEVATION DIFFERENCE(FEET) = 2.00

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.18
TOTAL AREA(ACRES) = 0.08 TOTAL RUNOFF(CFS) = 0.18

FLOW PROCESS FROM NODE 260.60 TO NODE 260.50 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1228.00 DOWNSTREAM ELEVATION(FEET) = 1207.00
STREET LENGTH(FEET) = 740.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.04
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.28
HALFSTREET FLOOD WIDTH(FEET) = 8.41
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.56
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.01
STREET FLOW TRAVEL TIME(MIN.) = 3.46 Tc(MIN.) = 11.17
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.843
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 3.29 SUBAREA RUNOFF(CFS) = 5.69
TOTAL AREA(ACRES) = 3.4 PEAK FLOW RATE(CFS) = 5.83

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 11.28
FLOW VELOCITY(FEET/SEC.) = 4.10 DEPTH*VELOCITY(FT*FT/SEC.) = 1.40
LONGEST FLOWPATH FROM NODE 260.70 TO NODE 260.50 = 820.00 FEET.

FLOW PROCESS FROM NODE 260.50 TO NODE 260.40 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1202.00 DOWNSTREAM(FEET) = 1201.00
FLOW LENGTH(FEET) = 20.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.62
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 5.83
PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 11.20
LONGEST FLOWPATH FROM NODE 260.70 TO NODE 260.40 = 840.00 FEET.

FLOW PROCESS FROM NODE 260.40 TO NODE 260.40 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.20
 RAINFALL INTENSITY(INCH/HR) = 3.84
 TOTAL STREAM AREA(ACRES) = 3.37
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.83

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	20.92	11.13	3.852	13.70
2	5.83	11.20	3.836	3.37

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	26.71	11.13	3.852
2	26.66	11.20	3.836

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 26.71 Tc(MIN.) = 11.13
 TOTAL AREA(ACRES) = 17.1
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.40 = 2075.00 FEET.

FLOW PROCESS FROM NODE 260.40 TO NODE 260.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1201.00 DOWNSTREAM(FEET) = 1186.00
 FLOW LENGTH(FEET) = 512.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 12.75
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 26.71
 PIPE TRAVEL TIME(MIN.) = 0.67 Tc(MIN.) = 11.80
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.00 = 2587.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.80
 RAINFALL INTENSITY(INCH/HR) = 3.71
 TOTAL STREAM AREA(ACRES) = 17.07
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 26.71

FLOW PROCESS FROM NODE 260.30 TO NODE 260.20 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

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                                P-26-10
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1209.00
DOWNSTREAM ELEVATION(FEET) = 1207.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.29
TOTAL AREA(ACRES) = 0.13 TOTAL RUNOFF(CFS) = 0.29

*****
FLOW PROCESS FROM NODE 260.20 TO NODE 260.10 IS CODE = 62
-----
>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====
UPSTREAM ELEVATION(FEET) = 1207.00 DOWNSTREAM ELEVATION(FEET) = 1192.00
STREET LENGTH(FEET) = 510.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.04
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.25
HALFSTREET FLOOD WIDTH(FEET) = 6.84
AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.31
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.84
STREET FLOW TRAVEL TIME(MIN.) = 2.57 Tc(MIN.) = 10.28
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.055
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 1.91 SUBAREA RUNOFF(CFS) = 3.49
TOTAL AREA(ACRES) = 2.0 PEAK FLOW RATE(CFS) = 3.72

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.30 HALFSTREET FLOOD WIDTH(FEET) = 9.16
FLOW VELOCITY(FEET/SEC.) = 3.78 DEPTH*VELOCITY(FT*FT/SEC.) = 1.13
LONGEST FLOWPATH FROM NODE 260.30 TO NODE 260.10 = 590.00 FEET.

*****
FLOW PROCESS FROM NODE 260.10 TO NODE 260.00 IS CODE = 31
-----
>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1188.00 DOWNSTREAM(FEET) = 1187.50
FLOW LENGTH(FEET) = 25.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 6.73
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 3.72

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PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.34
 LONGEST FLOWPATH FROM NODE 260.30 TO NODE 260.00 = 615.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 260.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.34
 RAINFALL INTENSITY(INCH/HR) = 4.04
 TOTAL STREAM AREA(ACRES) = 2.04
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.72

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	26.71	11.80	3.710	17.07
2	3.72	10.34	4.040	2.04

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	28.25	10.34	4.040
2	30.13	11.80	3.710

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 30.13 Tc(MIN.) = 11.80
 TOTAL AREA(ACRES) = 19.1
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 260.00 = 2587.00 FEET.

FLOW PROCESS FROM NODE 260.00 TO NODE 259.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1187.50 DOWNSTREAM(FEET) = 1186.00
 FLOW LENGTH(FEET) = 140.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 21.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.72
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 30.13
 PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 12.07
 LONGEST FLOWPATH FROM NODE 272.00 TO NODE 259.00 = 2727.00 FEET.

FLOW PROCESS FROM NODE 259.00 TO NODE 259.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	30.13	12.07	3.657	19.11

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 259.00 = 2727.00 FEET.

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** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	5.56	9.87	4.163	2.87

LONGEST FLOWPATH FROM NODE 286.00 TO NODE 259.00 = 640.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	30.20	9.87	4.163
2	35.01	12.07	3.657

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 35.01 Tc(MIN.) = 12.07
TOTAL AREA(ACRES) = 22.0

FLOW PROCESS FROM NODE 259.00 TO NODE 259.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 2 <<<<<

FLOW PROCESS FROM NODE 259.00 TO NODE 258.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1186.00 DOWNSTREAM(Feet) = 1184.00
FLOW LENGTH(Feet) = 160.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 30.0 INCH PIPE IS 20.4 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 9.86
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 35.01
PIPE TRAVEL TIME(MIN.) = 0.27 Tc(MIN.) = 12.34
LONGEST FLOWPATH FROM NODE 272.00 TO NODE 258.00 = 2887.00 FEET.

FLOW PROCESS FROM NODE 258.00 TO NODE 246.00 IS CODE = 51

>>>>>COMPUTE TRAPEZOIDAL CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA (EXISTING ELEMENT)<<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1184.00 DOWNSTREAM(Feet) = 1172.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 300.00 CHANNEL SLOPE = 0.0400
CHANNEL BASE(Feet) = 3.00 "Z" FACTOR = 2.000
MANNING'S FACTOR = 0.030 MAXIMUM DEPTH(Feet) = 10.00
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.484

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 35.85

TRAVEL TIME THRU SUBAREA BASED ON VELOCITY(Feet/Sec.) = 7.46

AVERAGE FLOW DEPTH(Feet) = 0.97 TRAVEL TIME(MIN.) = 0.67

Tc(MIN.) = 13.01

SUBAREA AREA(ACRES) = 1.93 SUBAREA RUNOFF(CFS) = 1.68

AREA-AVERAGE RUNOFF COEFFICIENT = 0.434

TOTAL AREA(ACRES) = 23.9 PEAK FLOW RATE(CFS) = 36.15

END OF SUBAREA CHANNEL FLOW HYDRAULICS:

DEPTH(Feet) = 0.97 FLOW VELOCITY(Feet/Sec.) = 7.50

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

 FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 2 <<<<<
 =====

 FLOW PROCESS FROM NODE 257.00 TO NODE 256.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1205.00
 DOWNSTREAM ELEVATION(FEET) = 1203.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.37
 TOTAL AREA(ACRES) = 0.17 TOTAL RUNOFF(CFS) = 0.37

 FLOW PROCESS FROM NODE 256.00 TO NODE 255.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1203.00 DOWNSTREAM ELEVATION(FEET) = 1185.00
 STREET LENGTH(FEET) = 670.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.20
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.31
 HALFSTREET FLOOD WIDTH(FEET) = 9.91
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.72
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.17
 STREET FLOW TRAVEL TIME(MIN.) = 3.00 Tc(MIN.) = 10.71
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.949

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 4.27 SUBAREA RUNOFF(CFS) = 7.59
 TOTAL AREA(ACRES) = 4.4 PEAK FLOW RATE(CFS) = 7.89

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.38 HALFSTREET FLOOD WIDTH(FEET) = 12.97
 FLOW VELOCITY(FEET/SEC.) = 4.31 DEPTH*VELOCITY(FT*FT/SEC.) = 1.62
 LONGEST FLOWPATH FROM NODE 257.00 TO NODE 255.00 = 750.00 FEET.

FLOW PROCESS FROM NODE 255.00 TO NODE 248.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1179.00 DOWNSTREAM(FEET) = 1175.00
 FLOW LENGTH(FEET) = 355.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 6.56
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 7.89
 PIPE TRAVEL TIME(MIN.) = 0.90 Tc(MIN.) = 11.61
 LONGEST FLOWPATH FROM NODE 257.00 TO NODE 248.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.61
 RAINFALL INTENSITY(INCH/HR) = 3.75
 TOTAL STREAM AREA(ACRES) = 4.44
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.89

FLOW PROCESS FROM NODE 254.00 TO NODE 253.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
 UPSTREAM ELEVATION(FEET) = 1188.00
 DOWNSTREAM ELEVATION(FEET) = 1186.00
 ELEVATION DIFFERENCE(FEET) = 2.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
 SUBAREA RUNOFF(CFS) = 0.26
 TOTAL AREA(ACRES) = 0.12 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 253.00 TO NODE 248.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1186.00 DOWNSTREAM ELEVATION(FEET) = 1181.00
 STREET LENGTH(FEET) = 330.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.95

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STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.31
HALFSTREET FLOOD WIDTH(FEET) = 9.59
AVERAGE FLOW VELOCITY(FEET/SEC.) = 2.76
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 0.85
STREET FLOW TRAVEL TIME(MIN.) = 1.99 Tc(MIN.) = 9.70
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.209
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
SUBAREA AREA(ACRES) = 2.82 SUBAREA RUNOFF(CFS) = 5.34
TOTAL AREA(ACRES) = 2.9 PEAK FLOW RATE(CFS) = 5.57

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 12.66
FLOW VELOCITY(FEET/SEC.) = 3.18 DEPTH*VELOCITY(FT*FT/SEC.) = 1.18
LONGEST FLOWPATH FROM NODE 254.00 TO NODE 248.00 = 410.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 9.70
RAINFALL INTENSITY(INCH/HR) = 4.21
TOTAL STREAM AREA(ACRES) = 2.94
PEAK FLOW RATE(CFS) AT CONFLUENCE = 5.57

FLOW PROCESS FROM NODE 251.00 TO NODE 250.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00
UPSTREAM ELEVATION(FEET) = 1203.00
DOWNSTREAM ELEVATION(FEET) = 1201.00
ELEVATION DIFFERENCE(FEET) = 2.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.711
10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.882
SUBAREA RUNOFF(CFS) = 0.20
TOTAL AREA(ACRES) = 0.09 TOTAL RUNOFF(CFS) = 0.20

FLOW PROCESS FROM NODE 250.00 TO NODE 248.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1201.00 DOWNSTREAM ELEVATION(FEET) = 1181.00
STREET LENGTH(FEET) = 890.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1

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 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 6.33
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.36
 HALFSTREET FLOOD WIDTH(FEET) = 12.28
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 3.82
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.38
 STREET FLOW TRAVEL TIME(MIN.) = 3.88 Tc(MIN.) = 11.59
 10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.752
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .4500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.450
 SUBAREA AREA(ACRES) = 7.17 SUBAREA RUNOFF(CFS) = 12.11
 TOTAL AREA(ACRES) = 7.3 PEAK FLOW RATE(CFS) = 12.26

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.44 HALFSTREET FLOOD WIDTH(FEET) = 16.09
 FLOW VELOCITY(FEET/SEC.) = 4.48 DEPTH*VELOCITY(FT*FT/SEC.) = 1.96
 LONGEST FLOWPATH FROM NODE 251.00 TO NODE 248.00 = 970.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 248.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 3
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 3 ARE:
 TIME OF CONCENTRATION(MIN.) = 11.59
 RAINFALL INTENSITY(INCH/HR) = 3.75
 TOTAL STREAM AREA(ACRES) = 7.26
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.26

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.89	11.61	3.748	4.44
2	5.57	9.70	4.209	2.94
3	12.26	11.59	3.752	7.26

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 3 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	22.42	9.70	4.209
2	25.10	11.59	3.752
3	25.09	11.61	3.748

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
 PEAK FLOW RATE(CFS) = 25.10 Tc(MIN.) = 11.59
 TOTAL AREA(ACRES) = 14.6
 LONGEST FLOWPATH FROM NODE 257.00 TO NODE 248.00 = 1105.00 FEET.

FLOW PROCESS FROM NODE 248.00 TO NODE 246.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1175.00 DOWNSTREAM(FEET) = 1172.00
FLOW LENGTH(FEET) = 150.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 24.0 INCH PIPE IS 16.6 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 10.80
ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 25.10
PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 11.83
LONGEST FLOWPATH FROM NODE 257.00 TO NODE 246.00 = 1255.00 FEET.

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FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 11
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>>>>CONFLUENCE MEMORY BANK # 2 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	25.10	11.83	3.705	14.64

LONGEST FLOWPATH FROM NODE 257.00 TO NODE 246.00 = 1255.00 FEET.

** MEMORY BANK # 2 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	36.15	13.01	3.484	23.91

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	57.96	11.83	3.705
2	59.75	13.01	3.484

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 59.75 Tc(MIN.) = 13.01
TOTAL AREA(ACRES) = 38.5

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FLOW PROCESS FROM NODE 246.00 TO NODE 246.00 IS CODE = 11
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>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	59.75	13.01	3.484	38.55

LONGEST FLOWPATH FROM NODE 272.00 TO NODE 246.00 = 3187.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	138.38	16.73	2.962	99.49

LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 246.00 = 5285.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	167.35	13.01	3.484
2	189.18	16.73	2.962

P-26-10

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 189.18 Tc(MIN.) = 16.73
TOTAL AREA(ACRES) = 138.0

FLOW PROCESS FROM NODE 246.00 TO NODE 245.50 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1175.00 DOWNSTREAM(FEET) = 1170.00
FLOW LENGTH(FEET) = 450.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 54.0 INCH PIPE IS 42.5 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 14.08
ESTIMATED PIPE DIAMETER(INCH) = 54.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 189.18
PIPE TRAVEL TIME(MIN.) = 0.53 Tc(MIN.) = 17.26
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 245.50 = 5735.00 FEET.

FLOW PROCESS FROM NODE 245.50 TO NODE 245.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1170.00 DOWNSTREAM(FEET) = 1098.00
FLOW LENGTH(FEET) = 170.00 MANNING'S N = 0.013
DEPTH OF FLOW IN 27.0 INCH PIPE IS 21.9 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 54.82
ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 189.18
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 17.31
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 245.00 = 5905.00 FEET.

FLOW PROCESS FROM NODE 245.00 TO NODE 26.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1098.00 DOWNSTREAM(FEET) = 970.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1180.00 CHANNEL SLOPE = 0.1085
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1064 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 189.18
FLOW VELOCITY(FEET/SEC) = 10.47 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.88 Tc(MIN.) = 19.19
LONGEST FLOWPATH FROM NODE 2696.00 TO NODE 26.00 = 7085.00 FEET.

FLOW PROCESS FROM NODE 245.00 TO NODE 26.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

10 YEAR RAINFALL INTENSITY(INCH/HOUR) = 2.711
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3754
SUBAREA AREA(ACRES) = 39.89 SUBAREA RUNOFF(CFS) = 27.03
TOTAL AREA(ACRES) = 177.9 TOTAL RUNOFF(CFS) = 189.18
TC(MIN.) = 19.19
NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

END OF STUDY SUMMARY:

TOTAL AREA(ACRES)	=	177.9	TC(MIN.) =	19.19
PEAK FLOW RATE(CFS)	=	189.18		

END OF RATIONAL METHOD ANALYSIS

♀
†

Basin 26

Node to Node		Code	C Factor	Area (ac.)	C x A
286	285	2	0.45	0.13	0.06
285	284	6	0.45	2.74	1.23
283	282	2	0.46	0.23	0.11
282	281	6	0.45	2.06	0.93
280.9	280.8	2	0.45	0.16	0.07
280.8	280.7	6	0.45	0.56	0.25
280	279	2	0.45	0.24	0.11
279	278	6	0.45	2.58	1.16
275.3	275.2	2	0.45	0.14	0.06
275.2	275.1	6	0.45	0.29	0.13
293.8	293.6	2	0.45	0.11	0.05
293.6	293.4	6	0.45	1.90	0.86
272	271	2	0.45	0.07	0.03
271	270	6	0.45	2.74	1.23
269	268	2	0.45	0.11	0.05
268	265	6	0.45	2.51	1.13
260.7	260.6	2	0.45	0.08	0.04
260.6	260.5	6	0.45	3.29	1.48
260.3	260.2	2	0.45	0.13	0.06
260.2	260.1	6	0.45	1.91	0.86
258	246	5	0.25	1.93	0.48
257	256	2	0.45	0.17	0.08
256	255	6	0.45	4.27	1.92
254	253	2	0.45	0.12	0.05
253	248	6	0.45	2.82	1.27
251	250	2	0.45	0.09	0.04
250	248	6	0.45	7.17	3.23
			Total	38.55	16.96
			Avg C =	0.44	

Basin 26, Lower Knolls

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/6/2017

TIME OF CONCENTRATION 13 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 38.5 ACRES

RUNOFF COEFFICIENT 0.44

PEAK DISCHARGE 148.8 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 13 DISCHARGE (CFS) = 0

TIME (MIN) = 26 DISCHARGE (CFS) = 3.6

TIME (MIN) = 39 DISCHARGE (CFS) = 3.7

TIME (MIN) = 52 DISCHARGE (CFS) = 3.9

TIME (MIN) = 65 DISCHARGE (CFS) = 4

TIME (MIN) = 78 DISCHARGE (CFS) = 4.3

TIME (MIN) = 91 DISCHARGE (CFS) = 4.4

TIME (MIN) = 104 DISCHARGE (CFS) = 4.7

TIME (MIN) = 117 DISCHARGE (CFS) = 4.9

TIME (MIN) = 130 DISCHARGE (CFS) = 5.3

TIME (MIN) = 143 DISCHARGE (CFS) = 5.6

TIME (MIN) = 156 DISCHARGE (CFS) = 6.2

TIME (MIN) = 169 DISCHARGE (CFS) = 6.6

TIME (MIN) = 182 DISCHARGE (CFS) = 7.5

TIME (MIN) = 195 DISCHARGE (CFS) = 8.2

TIME (MIN) = 208 DISCHARGE (CFS) = 10

TIME (MIN) = 221 DISCHARGE (CFS) = 11.4
TIME (MIN) = 234 DISCHARGE (CFS) = 16.7
TIME (MIN) = 247 DISCHARGE (CFS) = -40.9
TIME (MIN) = 260 DISCHARGE (CFS) = 148.8
TIME (MIN) = 273 DISCHARGE (CFS) = 13.4
TIME (MIN) = 286 DISCHARGE (CFS) = 9
TIME (MIN) = 299 DISCHARGE (CFS) = 7
TIME (MIN) = 312 DISCHARGE (CFS) = 5.9
TIME (MIN) = 325 DISCHARGE (CFS) = 5.1
TIME (MIN) = 338 DISCHARGE (CFS) = 4.6
TIME (MIN) = 351 DISCHARGE (CFS) = 4.1
TIME (MIN) = 364 DISCHARGE (CFS) = 3.8
TIME (MIN) = 377 DISCHARGE (CFS) = 0 0

Detention Basin 26 Proposed Conditions
Inflow Hydrograph Interpolation

Peak Discharge= 148.8 cfs

Time of Concentration= 13 minutes

HEC-HMS Time Interval Used= 1 minute

Time	Rick RatHydro Q	Interpolated Q	Q
min	cfs	cfs	cfs
0	0.0		0.0
1		0.0	0.0
2		0.0	0.0
3		0.0	0.0
4		0.0	0.0
5		0.0	0.0
6		0.0	0.0
7		0.0	0.0
8		0.0	0.0
9		0.0	0.0
10		0.0	0.0
11		0.0	0.0
12		0.0	0.0
13	0.0		0.0
14		0.3	0.3
15		0.6	0.6
16		0.8	0.8
17		1.1	1.1
18		1.4	1.4
19		1.7	1.7
20		1.9	1.9
21		2.2	2.2
22		2.5	2.5
23		2.8	2.8
24		3.0	3.0
25		3.3	3.3
26	3.6		3.6
27		3.6	3.6
28		3.6	3.6
29		3.6	3.6
30		3.6	3.6
31		3.6	3.6
32		3.6	3.6
33		3.7	3.7
34		3.7	3.7
35		3.7	3.7
36		3.7	3.7
37		3.7	3.7
38		3.7	3.7

13
6.5
4.333333
3.25
2.6
2.166667
1.857143
1.625
1.444444
1.3
1.181818
1.083333
13
6.5
4.333333
3.25
2.6
2.166667
1.857143
1.625
1.444444
1.3
1.181818
1.083333
13
6.5
4.333333
3.25
2.6
2.166667
1.857143
1.625
1.444444
1.3
1.181818
1.083333

39	3.7		3.7	
40		3.7	3.7	13
41		3.7	3.7	6.5
42		3.7	3.7	4.333333
43		3.8	3.8	3.25
44		3.8	3.8	2.6
45		3.8	3.8	2.166667
46		3.8	3.8	1.857143
47		3.8	3.8	1.625
48		3.8	3.8	1.444444
49		3.9	3.9	1.3
50		3.9	3.9	1.181818
51		3.9	3.9	1.083333
52	3.9		3.9	
53		3.9	3.9	13
54		3.9	3.9	6.5
55		3.9	3.9	4.333333
56		3.9	3.9	3.25
57		3.9	3.9	2.6
58		3.9	3.9	2.166667
59		4.0	4.0	1.857143
60		4.0	4.0	1.625
61		4.0	4.0	1.444444
62		4.0	4.0	1.3
63		4.0	4.0	1.181818
64		4.0	4.0	1.083333
65	4.0		4.0	
66		4.0	4.0	13
67		4.0	4.0	6.5
68		4.1	4.1	4.333333
69		4.1	4.1	3.25
70		4.1	4.1	2.6
71		4.1	4.1	2.166667
72		4.2	4.2	1.857143
73		4.2	4.2	1.625
74		4.2	4.2	1.444444
75		4.2	4.2	1.3
76		4.3	4.3	1.181818
77		4.3	4.3	1.083333
78	4.3		4.3	
79		4.3	4.3	13
80		4.3	4.3	6.5
81		4.3	4.3	4.333333
82		4.3	4.3	3.25
83		4.3	4.3	2.6
84		4.3	4.3	2.166667
85		4.4	4.4	1.857143
86		4.4	4.4	1.625

87		4.4	4.4	1.444444
88		4.4	4.4	1.3
89		4.4	4.4	1.181818
90		4.4	4.4	1.083333
91	4.4		4.4	
92		4.4	4.4	13
93		4.4	4.4	6.5
94		4.5	4.5	4.333333
95		4.5	4.5	3.25
96		4.5	4.5	2.6
97		4.5	4.5	2.166667
98		4.6	4.6	1.857143
99		4.6	4.6	1.625
100		4.6	4.6	1.444444
101		4.6	4.6	1.3
102		4.7	4.7	1.181818
103		4.7	4.7	1.083333
104	4.7		4.7	
105		4.7	4.7	13
106		4.7	4.7	6.5
107		4.7	4.7	4.333333
108		4.8	4.8	3.25
109		4.8	4.8	2.6
110		4.8	4.8	2.166667
111		4.8	4.8	1.857143
112		4.8	4.8	1.625
113		4.8	4.8	1.444444
114		4.9	4.9	1.3
115		4.9	4.9	1.181818
116		4.9	4.9	1.083333
117	4.9		4.9	
118		4.9	4.9	13
119		5.0	5.0	6.5
120		5.0	5.0	4.333333
121		5.0	5.0	3.25
122		5.1	5.1	2.6
123		5.1	5.1	2.166667
124		5.1	5.1	1.857143
125		5.1	5.1	1.625
126		5.2	5.2	1.444444
127		5.2	5.2	1.3
128		5.2	5.2	1.181818
129		5.3	5.3	1.083333
130	5.3		5.3	
131		5.3	5.3	13
132		5.3	5.3	6.5
133		5.4	5.4	4.333333
134		5.4	5.4	3.25

135		5.4	5.4	2.6
136		5.4	5.4	2.166667
137		5.5	5.5	1.857143
138		5.5	5.5	1.625
139		5.5	5.5	1.444444
140		5.5	5.5	1.3
141		5.6	5.6	1.181818
142		5.6	5.6	1.083333
143	5.6		5.6	
144		5.6	5.6	13
145		5.7	5.7	6.5
146		5.7	5.7	4.333333
147		5.8	5.8	3.25
148		5.8	5.8	2.6
149		5.9	5.9	2.166667
150		5.9	5.9	1.857143
151		6.0	6.0	1.625
152		6.0	6.0	1.444444
153		6.1	6.1	1.3
154		6.1	6.1	1.181818
155		6.2	6.2	1.083333
156	6.2		6.2	
157		6.2	6.2	13
158		6.3	6.3	6.5
159		6.3	6.3	4.333333
160		6.3	6.3	3.25
161		6.4	6.4	2.6
162		6.4	6.4	2.166667
163		6.4	6.4	1.857143
164		6.4	6.4	1.625
165		6.5	6.5	1.444444
166		6.5	6.5	1.3
167		6.5	6.5	1.181818
168		6.6	6.6	1.083333
169	6.6		6.6	
170		6.7	6.7	13
171		6.7	6.7	6.5
172		6.8	6.8	4.333333
173		6.9	6.9	3.25
174		6.9	6.9	2.6
175		7.0	7.0	2.166667
176		7.1	7.1	1.857143
177		7.2	7.2	1.625
178		7.2	7.2	1.444444
179		7.3	7.3	1.3
180		7.4	7.4	1.181818
181		7.4	7.4	1.083333
182	7.5		7.5	

183		7.6	7.6	13
184		7.6	7.6	6.5
185		7.7	7.7	4.333333
186		7.7	7.7	3.25
187		7.8	7.8	2.6
188		7.8	7.8	2.166667
189		7.9	7.9	1.857143
190		7.9	7.9	1.625
191		8.0	8.0	1.444444
192		8.0	8.0	1.3
193		8.1	8.1	1.181818
194		8.1	8.1	1.083333
195	8.2		8.2	
196		8.3	8.3	13
197		8.5	8.5	6.5
198		8.6	8.6	4.333333
199		8.8	8.8	3.25
200		8.9	8.9	2.6
201		9.0	9.0	2.166667
202		9.2	9.2	1.857143
203		9.3	9.3	1.625
204		9.4	9.4	1.444444
205		9.6	9.6	1.3
206		9.7	9.7	1.181818
207		9.9	9.9	1.083333
208	10.0		10.0	
209		10.1	10.1	13
210		10.2	10.2	6.5
211		10.3	10.3	4.333333
212		10.4	10.4	3.25
213		10.5	10.5	2.6
214		10.6	10.6	2.166667
215		10.8	10.8	1.857143
216		10.9	10.9	1.625
217		11.0	11.0	1.444444
218		11.1	11.1	1.3
219		11.2	11.2	1.181818
220		11.3	11.3	1.083333
221	11.4		11.4	
222		11.8	11.8	13
223		12.2	12.2	6.5
224		12.6	12.6	4.333333
225		13.0	13.0	3.25
226		13.4	13.4	2.6
227		13.8	13.8	2.166667
228		14.3	14.3	1.857143
229		14.7	14.7	1.625
230		15.1	15.1	1.444444

231		15.5	15.5	1.3
232		15.9	15.9	1.181818
233		16.3	16.3	1.083333
234	16.7		16.7	
235		21.8	21.8	13
236		26.9	26.9	6.5
237		32.0	32.0	4.333333
238		37.0	37.0	3.25
239		42.1	42.1	2.6
240		47.2	47.2	2.166667
241		52.3	52.3	1.857143
242		57.4	57.4	1.625
243		62.5	62.5	1.444444
244		67.5	67.5	1.3
245		72.6	72.6	1.181818
246		77.7	77.7	1.083333
247	82.8		82.8	
248		87.9	87.9	13
249		93.0	93.0	6.5
250		98.0	98.0	4.333333
251		103.1	103.1	3.25
252		108.2	108.2	2.6
253		113.3	113.3	2.166667
254		118.3	118.3	1.857143
255		123.4	123.4	1.625
256		128.5	128.5	1.444444
257		133.6	133.6	1.3
258		138.6	138.6	1.181818
259		143.7	143.7	1.083333
260	148.8		148.8	
261		138.4	138.4	13
262		128.0	128.0	6.5
263		117.6	117.6	4.333333
264		107.1	107.1	3.25
265		96.7	96.7	2.6
266		86.3	86.3	2.166667
267		75.9	75.9	1.857143
268		65.5	65.5	1.625
269		55.1	55.1	1.444444
270		44.6	44.6	1.3
271		34.2	34.2	1.181818
272		23.8	23.8	1.083333
273	13.4		13.4	
274		13.1	13.1	13
275		12.7	12.7	6.5
276		12.4	12.4	4.333333
277		12.0	12.0	3.25
278		11.7	11.7	2.6

279		11.4	11.4	2.166667
280		11.0	11.0	1.857143
281		10.7	10.7	1.625
282		10.4	10.4	1.444444
283		10.0	10.0	1.3
284		9.7	9.7	1.181818
285		9.3	9.3	1.083333
286	9.0		9.0	
287		8.8	8.8	13
288		8.7	8.7	6.5
289		8.5	8.5	4.333333
290		8.4	8.4	3.25
291		8.2	8.2	2.6
292		8.1	8.1	2.166667
293		7.9	7.9	1.857143
294		7.8	7.8	1.625
295		7.6	7.6	1.444444
296		7.5	7.5	1.3
297		7.3	7.3	1.181818
298		7.2	7.2	1.083333
299	7.0		7.0	
300		6.9	6.9	13
301		6.8	6.8	6.5
302		6.7	6.7	4.333333
303		6.7	6.7	3.25
304		6.6	6.6	2.6
305		6.5	6.5	2.166667
306		6.4	6.4	1.857143
307		6.3	6.3	1.625
308		6.2	6.2	1.444444
309		6.2	6.2	1.3
310		6.1	6.1	1.181818
311		6.0	6.0	1.083333
312	5.9		5.9	
313		5.8	5.8	13
314		5.8	5.8	6.5
315		5.7	5.7	4.333333
316		5.7	5.7	3.25
317		5.6	5.6	2.6
318		5.5	5.5	2.166667
319		5.5	5.5	1.857143
320		5.4	5.4	1.625
321		5.3	5.3	1.444444
322		5.3	5.3	1.3
323		5.2	5.2	1.181818
324		5.2	5.2	1.083333
325	5.1		5.1	
326		5.1	5.1	13

327		5.0	5.0	6.5
328		5.0	5.0	4.333333
329		4.9	4.9	3.25
330		4.9	4.9	2.6
331		4.9	4.9	2.166667
332		4.8	4.8	1.857143
333		4.8	4.8	1.625
334		4.8	4.8	1.444444
335		4.7	4.7	1.3
336		4.7	4.7	1.181818
337		4.6	4.6	1.083333
338	4.6		4.6	
339		4.6	4.6	13
340		4.5	4.5	6.5
341		4.5	4.5	4.333333
342		4.4	4.4	3.25
343		4.4	4.4	2.6
344		4.4	4.4	2.166667
345		4.3	4.3	1.857143
346		4.3	4.3	1.625
347		4.3	4.3	1.444444
348		4.2	4.2	1.3
349		4.2	4.2	1.181818
350		4.1	4.1	1.083333
351	4.1		4.1	
352		4.1	4.1	13
353		4.1	4.1	6.5
354		4.0	4.0	4.333333
355		4.0	4.0	3.25
356		4.0	4.0	2.6
357		4.0	4.0	2.166667
358		3.9	3.9	1.857143
359		3.9	3.9	1.625
360		3.9	3.9	1.444444
361		3.9	3.9	1.3
362		3.8	3.8	1.181818
363		3.8	3.8	1.083333
364	3.8		3.8	
365		3.5	3.5	13
366		3.2	3.2	6.5
367		2.9	2.9	4.333333
368		2.6	2.6	3.25
369		2.3	2.3	2.6
370		2.0	2.0	2.166667
371		1.8	1.8	1.857143
372		1.5	1.5	1.625
373		1.2	1.2	1.444444
374		0.9	0.9	1.3

375		0.6	0.6	1.181818
376		0.3	0.3	1.083333
377	0.0		0.0	

Detention 26 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a project tree for 'Detention 26 Pr'. The tree includes folders for 'Basin Models', 'Meteorologic Models', 'Control Specifications', 'Time-Series Data', and 'Paired Data'. Under 'Basin Models', there is a folder 'Basin 26' which contains 'Basin Inflow' (highlighted), 'Discharge Gage', 'Detention Basin 26', and 'Outlets'. 'Outlets' contains 'Outlet 1'. Under 'Time-Series Data', there is a folder 'Discharge Gages' containing 'Node 246 Inflow' with a time range of '01Jan2000, 00:00 - 01Jan2000, 06:17'. Under 'Paired Data', there is a folder 'Elevation-Storage Functions' containing 'Basin 27 Stage-Storage'.

Below the project tree is a tabbed interface with 'Components', 'Compute', and 'Results' tabs. The 'Components' tab is active, showing a sub-tabbed interface with 'Source', 'Inflow', and 'Options' tabs. The 'Inflow' tab is active, displaying the configuration for 'Basin Inflow'.

Basin Name: Basin 26
Element Name: Basin Inflow

Description: Node 246

Downstream: Detention Basin 26

Area (MI²): 0.052

Flow Method: Discharge Gage

Detention 26 Pr

Basin Models

Basin 26

Basin Inflow

Discharge Gage

Detention Basin 26

Outlets

Outlet 1

Meteorologic Models

Control Specifications

Time-Series Data

Discharge Gages

Node 246 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:17

Paired Data

Elevation-Storage Functions

Basin 27 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 26

Element Name: Detention Basin 26

Method: Orifice Outlet

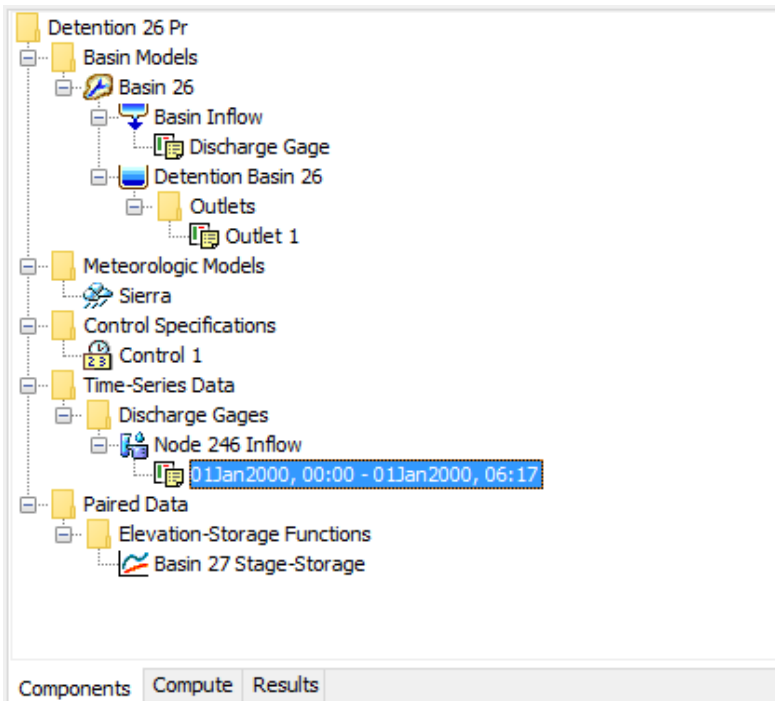
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 1.5

*Area (FT2) 0.785

*Coefficient: 0.60



Time-Series Gage Time Window Table Graph	
Time (ddMMYYYY, HH:mm)	Discharge (CFS)
01Jan2000, 00:00	0.0
01Jan2000, 00:01	0.0
01Jan2000, 00:02	0.0
01Jan2000, 00:03	0.0
01Jan2000, 00:04	0.0
01Jan2000, 00:05	0.0
01Jan2000, 00:06	0.0
01Jan2000, 00:07	0.0
01Jan2000, 00:08	0.0
01Jan2000, 00:09	0.0
01Jan2000, 00:10	0.0
01Jan2000, 00:11	0.0
01Jan2000, 00:12	0.0
01Jan2000, 00:13	0.0
01Jan2000, 00:14	0.3
01Jan2000, 00:15	0.6
01Jan2000, 00:16	0.8
01Jan2000, 00:17	1.1
01Jan2000, 00:18	1.4
01Jan2000, 00:19	1.7
01Jan2000, 00:20	1.9
01Jan2000, 00:21	2.2
01Jan2000, 00:22	2.5
01Jan2000, 00:23	2.8
01Jan2000, 00:24	3.0

- Detention 26 Pr
 - Basin Models
 - Basin 26
 - Basin Inflow
 - Discharge Gage
 - Detention Basin 26
 - Outlets
 - Outlet 1
 - Meteorologic Models
 - Control Specifications
 - Time-Series Data
 - Discharge Gages
 - Node 246 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:17
 - Paired Data
 - Elevation-Storage Functions
 - Basin 27 Stage-Storage

Components
Compute
Results

Paired Data
Table
Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	4.391
9.0	10.896

Project: Detention 26 Pr Simulation Run: Run 1
Reservoir: Detention Basin 26

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 26
End of Run:	01Jan2000, 06:17	Meteorologic Model:	Sierra
Compute Time:	17Jan2017, 12:29:45	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	148.8 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:20
Peak Discharge:	7.4 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:57
Inflow Volume:	7.1 (AC-FT)	Peak Storage:	6.1 (AC-FT)
Discharge Volume:	1.3 (AC-FT)	Peak Elevation:	5.3 (FT)

Observed Hydrograph at Gage Node 246 Inflow

Peak Discharge:	148.8 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:20
Mean Abs Error:	12.2 (CFS)	RMS Error:	28.2 (CFS)
Volume:	7.1 (AC-FT)	Volume Residual:	-5.8 (AC-FT)
Nash-Sutcliffe:	-0.129		

Project: Detention 26 Pr Simulation Run: Run 1
Reservoir: Detention Basin 26

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 26
End of Run: 01Jan2000, 06:17 Meteorologic Model: Sierra
Compute Time: 17Jan2017, 12:29:45 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:02	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:03	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:04	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:05	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:06	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:07	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:08	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:09	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:10	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:11	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:12	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:13	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:14	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:15	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:16	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:17	1.1	0.0	0.0	0.0	1.1
01Jan2000	00:18	1.4	0.0	0.0	0.0	1.4
01Jan2000	00:19	1.7	0.0	0.0	0.0	1.7
01Jan2000	00:20	1.9	0.0	0.0	0.0	1.9
01Jan2000	00:21	2.2	0.0	0.0	0.0	2.2
01Jan2000	00:22	2.5	0.0	0.0	0.0	2.5
01Jan2000	00:23	2.8	0.0	0.0	0.0	2.8
01Jan2000	00:24	3.0	0.0	0.0	0.0	3.0
01Jan2000	00:25	3.3	0.0	0.0	0.0	3.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	3.6	0.0	0.0	0.0	3.6
01Jan2000	00:27	3.6	0.0	0.0	0.0	3.6
01Jan2000	00:28	3.6	0.0	0.0	0.0	3.6
01Jan2000	00:29	3.6	0.0	0.0	0.0	3.6
01Jan2000	00:30	3.6	0.1	0.0	0.0	3.6
01Jan2000	00:31	3.6	0.1	0.1	0.0	3.6
01Jan2000	00:32	3.6	0.1	0.1	0.0	3.6
01Jan2000	00:33	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:34	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:35	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:36	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:37	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:38	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:39	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:40	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:41	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:42	3.7	0.1	0.1	0.0	3.7
01Jan2000	00:43	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:44	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:45	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:46	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:47	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:48	3.8	0.1	0.1	0.0	3.8
01Jan2000	00:49	3.9	0.1	0.1	0.0	3.9
01Jan2000	00:50	3.9	0.2	0.1	0.0	3.9
01Jan2000	00:51	3.9	0.2	0.1	0.0	3.9
01Jan2000	00:52	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:53	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:54	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:55	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:56	3.9	0.2	0.2	0.0	3.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:58	3.9	0.2	0.2	0.0	3.9
01Jan2000	00:59	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:00	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:01	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:02	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:03	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:04	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:05	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:06	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:07	4.0	0.2	0.2	0.0	4.0
01Jan2000	01:08	4.1	0.3	0.2	0.0	4.1
01Jan2000	01:09	4.1	0.3	0.2	0.0	4.1
01Jan2000	01:10	4.1	0.3	0.2	0.0	4.1
01Jan2000	01:11	4.1	0.3	0.2	0.0	4.1
01Jan2000	01:12	4.2	0.3	0.3	0.0	4.2
01Jan2000	01:13	4.2	0.3	0.3	0.0	4.2
01Jan2000	01:14	4.2	0.3	0.3	0.0	4.2
01Jan2000	01:15	4.2	0.3	0.3	0.0	4.2
01Jan2000	01:16	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:17	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:18	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:19	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:20	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:21	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:22	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:23	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:24	4.3	0.3	0.3	0.0	4.3
01Jan2000	01:25	4.4	0.4	0.3	0.0	4.4
01Jan2000	01:26	4.4	0.4	0.3	0.0	4.4
01Jan2000	01:27	4.4	0.4	0.3	0.0	4.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	4.4	0.4	0.3	0.0	4.4
01Jan2000	01:29	4.4	0.4	0.3	0.0	4.4
01Jan2000	01:30	4.4	0.4	0.3	0.0	4.4
01Jan2000	01:31	4.4	0.4	0.4	0.0	4.4
01Jan2000	01:32	4.4	0.4	0.4	0.0	4.4
01Jan2000	01:33	4.4	0.4	0.4	0.0	4.4
01Jan2000	01:34	4.5	0.4	0.4	0.0	4.5
01Jan2000	01:35	4.5	0.4	0.4	0.0	4.5
01Jan2000	01:36	4.5	0.4	0.4	0.0	4.5
01Jan2000	01:37	4.5	0.4	0.4	0.0	4.5
01Jan2000	01:38	4.6	0.4	0.4	0.0	4.6
01Jan2000	01:39	4.6	0.4	0.4	0.0	4.6
01Jan2000	01:40	4.6	0.4	0.4	0.0	4.6
01Jan2000	01:41	4.6	0.5	0.4	0.0	4.6
01Jan2000	01:42	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:43	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:44	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:45	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:46	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:47	4.7	0.5	0.4	0.0	4.7
01Jan2000	01:48	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:49	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:50	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:51	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:52	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:53	4.8	0.5	0.5	0.0	4.8
01Jan2000	01:54	4.9	0.5	0.5	0.0	4.9
01Jan2000	01:55	4.9	0.5	0.5	0.0	4.9
01Jan2000	01:56	4.9	0.5	0.5	0.0	4.9
01Jan2000	01:57	4.9	0.6	0.5	0.0	4.9
01Jan2000	01:58	4.9	0.6	0.5	0.0	4.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	5.0	0.6	0.5	0.0	5.0
01Jan2000	02:00	5.0	0.6	0.5	0.0	5.0
01Jan2000	02:01	5.0	0.6	0.5	0.0	5.0
01Jan2000	02:02	5.1	0.6	0.5	0.0	5.1
01Jan2000	02:03	5.1	0.6	0.5	0.0	5.1
01Jan2000	02:04	5.1	0.6	0.6	0.0	5.1
01Jan2000	02:05	5.1	0.6	0.6	0.0	5.1
01Jan2000	02:06	5.2	0.6	0.6	0.0	5.2
01Jan2000	02:07	5.2	0.6	0.6	0.0	5.2
01Jan2000	02:08	5.2	0.6	0.6	0.0	5.2
01Jan2000	02:09	5.3	0.6	0.6	0.0	5.3
01Jan2000	02:10	5.3	0.6	0.6	0.0	5.3
01Jan2000	02:11	5.3	0.7	0.6	0.0	5.3
01Jan2000	02:12	5.3	0.7	0.6	0.0	5.3
01Jan2000	02:13	5.4	0.7	0.6	0.0	5.4
01Jan2000	02:14	5.4	0.7	0.6	0.0	5.4
01Jan2000	02:15	5.4	0.7	0.6	0.0	5.4
01Jan2000	02:16	5.4	0.7	0.6	0.0	5.4
01Jan2000	02:17	5.5	0.7	0.6	0.0	5.5
01Jan2000	02:18	5.5	0.7	0.6	0.0	5.5
01Jan2000	02:19	5.5	0.7	0.7	0.0	5.5
01Jan2000	02:20	5.5	0.7	0.7	0.0	5.5
01Jan2000	02:21	5.6	0.7	0.7	0.0	5.6
01Jan2000	02:22	5.6	0.7	0.7	0.0	5.6
01Jan2000	02:23	5.6	0.7	0.7	0.0	5.6
01Jan2000	02:24	5.6	0.8	0.7	0.0	5.6
01Jan2000	02:25	5.7	0.8	0.7	0.0	5.7
01Jan2000	02:26	5.7	0.8	0.7	0.0	5.7
01Jan2000	02:27	5.8	0.8	0.7	0.0	5.8
01Jan2000	02:28	5.8	0.8	0.7	0.0	5.8
01Jan2000	02:29	5.9	0.8	0.7	0.0	5.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	5.9	0.8	0.7	0.0	5.9
01Jan2000	02:31	6.0	0.8	0.7	0.0	6.0
01Jan2000	02:32	6.0	0.8	0.7	0.0	6.0
01Jan2000	02:33	6.1	0.8	0.8	0.0	6.1
01Jan2000	02:34	6.1	0.8	0.8	0.0	6.1
01Jan2000	02:35	6.2	0.8	0.8	0.0	6.2
01Jan2000	02:36	6.2	0.9	0.8	0.0	6.2
01Jan2000	02:37	6.2	0.9	0.8	0.0	6.2
01Jan2000	02:38	6.3	0.9	0.8	0.0	6.3
01Jan2000	02:39	6.3	0.9	0.8	0.0	6.3
01Jan2000	02:40	6.3	0.9	0.8	0.0	6.3
01Jan2000	02:41	6.4	0.9	0.8	0.0	6.4
01Jan2000	02:42	6.4	0.9	0.8	0.0	6.4
01Jan2000	02:43	6.4	0.9	0.8	0.0	6.4
01Jan2000	02:44	6.4	0.9	0.8	0.0	6.4
01Jan2000	02:45	6.5	0.9	0.8	0.0	6.5
01Jan2000	02:46	6.5	0.9	0.9	0.0	6.5
01Jan2000	02:47	6.5	0.9	0.9	0.0	6.5
01Jan2000	02:48	6.6	1.0	0.9	0.0	6.6
01Jan2000	02:49	6.6	1.0	0.9	0.0	6.6
01Jan2000	02:50	6.7	1.0	0.9	0.0	6.7
01Jan2000	02:51	6.7	1.0	0.9	0.0	6.7
01Jan2000	02:52	6.8	1.0	0.9	0.0	6.8
01Jan2000	02:53	6.9	1.0	0.9	0.0	6.9
01Jan2000	02:54	6.9	1.0	0.9	0.0	6.9
01Jan2000	02:55	7.0	1.0	0.9	0.0	7.0
01Jan2000	02:56	7.1	1.0	0.9	0.0	7.1
01Jan2000	02:57	7.2	1.0	0.9	0.0	7.2
01Jan2000	02:58	7.2	1.1	1.0	0.0	7.2
01Jan2000	02:59	7.3	1.1	1.0	0.0	7.3
01Jan2000	03:00	7.4	1.1	1.0	0.0	7.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	7.4	1.1	1.0	0.0	7.4
01Jan2000	03:02	7.5	1.1	1.0	0.0	7.5
01Jan2000	03:03	7.6	1.1	1.0	0.0	7.6
01Jan2000	03:04	7.6	1.1	1.0	0.0	7.6
01Jan2000	03:05	7.7	1.1	1.0	0.0	7.7
01Jan2000	03:06	7.7	1.1	1.0	0.0	7.7
01Jan2000	03:07	7.8	1.1	1.0	0.0	7.8
01Jan2000	03:08	7.8	1.2	1.1	0.0	7.8
01Jan2000	03:09	7.9	1.2	1.1	0.0	7.9
01Jan2000	03:10	7.9	1.2	1.1	0.0	7.9
01Jan2000	03:11	8.0	1.2	1.1	0.0	8.0
01Jan2000	03:12	8.0	1.2	1.1	0.0	8.0
01Jan2000	03:13	8.1	1.2	1.1	0.0	8.1
01Jan2000	03:14	8.1	1.2	1.1	0.0	8.1
01Jan2000	03:15	8.2	1.2	1.1	0.0	8.2
01Jan2000	03:16	8.3	1.2	1.1	0.0	8.3
01Jan2000	03:17	8.5	1.3	1.1	0.0	8.5
01Jan2000	03:18	8.6	1.3	1.2	0.0	8.6
01Jan2000	03:19	8.8	1.3	1.2	0.0	8.8
01Jan2000	03:20	8.9	1.3	1.2	0.0	8.9
01Jan2000	03:21	9.0	1.3	1.2	0.0	9.0
01Jan2000	03:22	9.2	1.3	1.2	0.0	9.2
01Jan2000	03:23	9.3	1.3	1.2	0.0	9.3
01Jan2000	03:24	9.4	1.3	1.2	0.0	9.4
01Jan2000	03:25	9.6	1.4	1.2	0.0	9.6
01Jan2000	03:26	9.7	1.4	1.2	0.0	9.7
01Jan2000	03:27	9.9	1.4	1.3	0.0	9.9
01Jan2000	03:28	10.0	1.4	1.3	0.0	10.0
01Jan2000	03:29	10.1	1.4	1.3	0.0	10.1
01Jan2000	03:30	10.2	1.4	1.3	0.0	10.2
01Jan2000	03:31	10.3	1.4	1.3	0.0	10.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	10.4	1.5	1.3	0.0	10.4
01Jan2000	03:33	10.5	1.5	1.3	0.0	10.5
01Jan2000	03:34	10.6	1.5	1.3	0.0	10.6
01Jan2000	03:35	10.8	1.5	1.4	0.0	10.8
01Jan2000	03:36	10.9	1.5	1.4	0.0	10.9
01Jan2000	03:37	11.0	1.5	1.4	0.0	11.0
01Jan2000	03:38	11.1	1.5	1.4	0.0	11.1
01Jan2000	03:39	11.2	1.6	1.4	0.0	11.2
01Jan2000	03:40	11.3	1.6	1.4	0.0	11.3
01Jan2000	03:41	11.4	1.6	1.4	0.0	11.4
01Jan2000	03:42	11.8	1.6	1.5	0.0	11.8
01Jan2000	03:43	12.2	1.6	1.5	0.0	12.2
01Jan2000	03:44	12.6	1.6	1.5	0.0	12.6
01Jan2000	03:45	13.0	1.7	1.5	0.3	13.0
01Jan2000	03:46	13.4	1.7	1.5	0.6	13.4
01Jan2000	03:47	13.8	1.7	1.5	0.7	13.8
01Jan2000	03:48	14.3	1.7	1.6	0.9	14.3
01Jan2000	03:49	14.7	1.7	1.6	1.0	14.7
01Jan2000	03:50	15.1	1.7	1.6	1.1	15.1
01Jan2000	03:51	15.5	1.8	1.6	1.2	15.5
01Jan2000	03:52	15.9	1.8	1.6	1.3	15.9
01Jan2000	03:53	16.3	1.8	1.6	1.4	16.3
01Jan2000	03:54	16.7	1.8	1.7	1.5	16.7
01Jan2000	03:55	21.8	1.8	1.7	1.6	21.8
01Jan2000	03:56	26.9	1.9	1.7	1.7	26.9
01Jan2000	03:57	32.0	1.9	1.7	1.9	32.0
01Jan2000	03:58	37.0	2.0	1.8	2.0	37.0
01Jan2000	03:59	42.1	2.0	1.8	2.2	42.1
01Jan2000	04:00	47.2	2.1	1.9	2.4	47.2
01Jan2000	04:01	52.3	2.1	1.9	2.5	52.3
01Jan2000	04:02	57.4	2.2	2.0	2.7	57.4

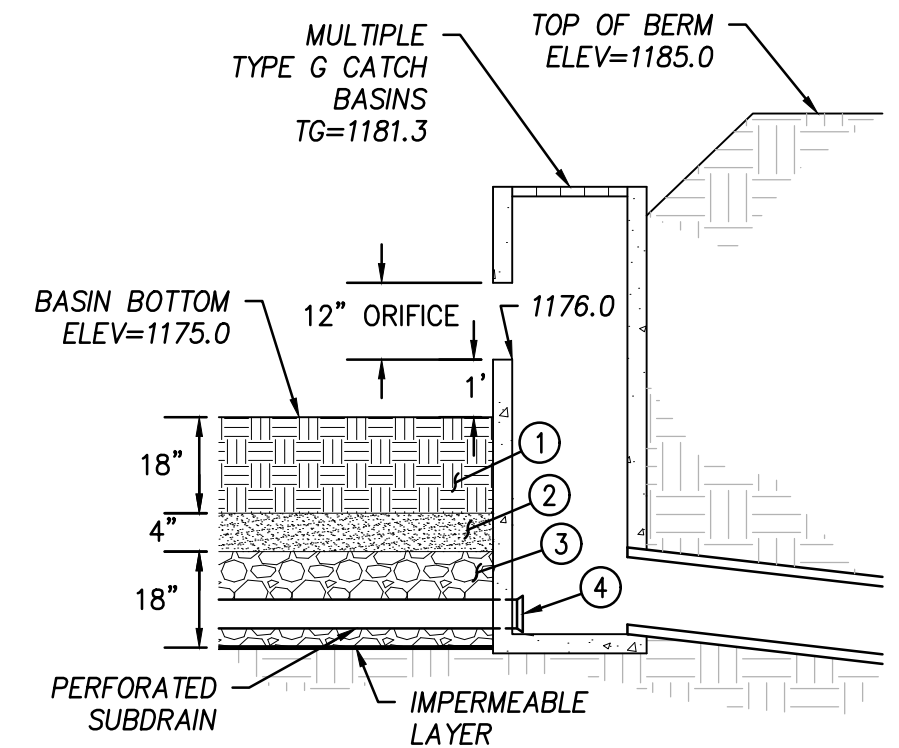
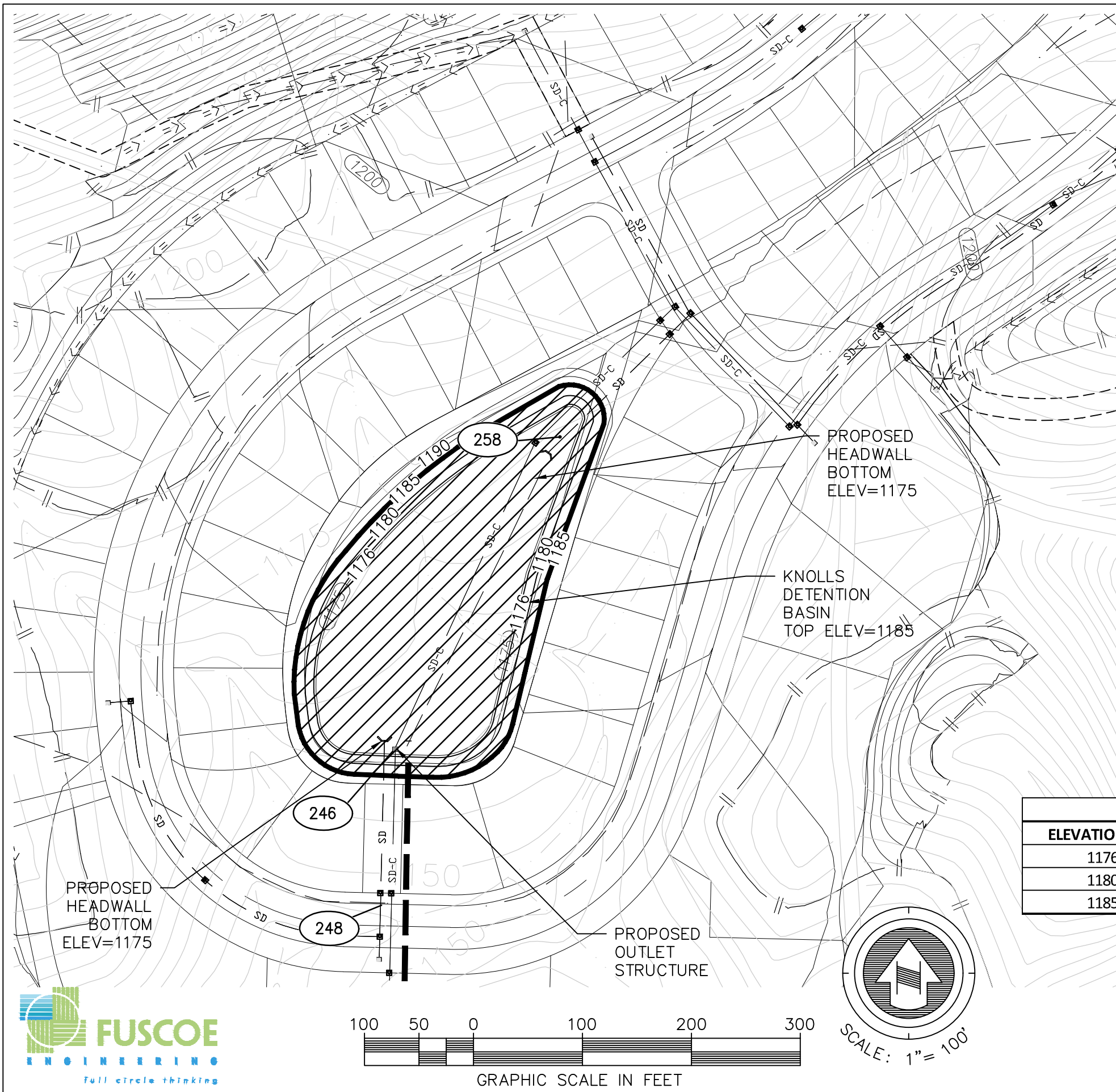
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	62.5	2.3	2.1	2.9	62.5
01Jan2000	04:04	67.5	2.4	2.2	3.1	67.5
01Jan2000	04:05	72.6	2.5	2.2	3.3	72.6
01Jan2000	04:06	77.7	2.6	2.3	3.5	77.7
01Jan2000	04:07	82.8	2.7	2.4	3.7	82.8
01Jan2000	04:08	87.9	2.8	2.5	3.8	87.9
01Jan2000	04:09	93.0	2.9	2.6	4.0	93.0
01Jan2000	04:10	98.0	3.0	2.8	4.2	98.0
01Jan2000	04:11	103.1	3.2	2.9	4.4	103.1
01Jan2000	04:12	108.2	3.3	3.0	4.6	108.2
01Jan2000	04:13	113.3	3.4	3.1	4.8	113.3
01Jan2000	04:14	118.3	3.6	3.3	5.0	118.3
01Jan2000	04:15	123.4	3.8	3.4	5.2	123.4
01Jan2000	04:16	128.5	3.9	3.6	5.4	128.5
01Jan2000	04:17	133.6	4.1	3.7	5.6	133.6
01Jan2000	04:18	138.6	4.3	3.9	5.8	138.6
01Jan2000	04:19	143.7	4.5	4.1	6.0	143.7
01Jan2000	04:20	148.8	4.7	4.2	6.2	148.8
01Jan2000	04:21	138.4	4.8	4.3	6.4	138.4
01Jan2000	04:22	128.0	5.0	4.5	6.5	128.0
01Jan2000	04:23	117.6	5.2	4.6	6.7	117.6
01Jan2000	04:24	107.1	5.3	4.7	6.8	107.1
01Jan2000	04:25	96.7	5.5	4.8	6.9	96.7
01Jan2000	04:26	86.3	5.6	4.9	7.0	86.3
01Jan2000	04:27	75.9	5.7	5.0	7.1	75.9
01Jan2000	04:28	65.5	5.8	5.1	7.1	65.5
01Jan2000	04:29	55.1	5.8	5.1	7.2	55.1
01Jan2000	04:30	44.6	5.9	5.2	7.2	44.6
01Jan2000	04:31	34.2	5.9	5.2	7.3	34.2
01Jan2000	04:32	23.8	6.0	5.2	7.3	23.8
01Jan2000	04:33	13.4	6.0	5.2	7.3	13.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	13.1	6.0	5.2	7.3	13.1
01Jan2000	04:35	12.7	6.0	5.2	7.3	12.7
01Jan2000	04:36	12.4	6.0	5.2	7.3	12.4
01Jan2000	04:37	12.0	6.0	5.2	7.3	12.0
01Jan2000	04:38	11.7	6.0	5.3	7.3	11.7
01Jan2000	04:39	11.4	6.0	5.3	7.3	11.4
01Jan2000	04:40	11.0	6.0	5.3	7.3	11.0
01Jan2000	04:41	10.7	6.0	5.3	7.3	10.7
01Jan2000	04:42	10.4	6.0	5.3	7.3	10.4
01Jan2000	04:43	10.0	6.0	5.3	7.3	10.0
01Jan2000	04:44	9.7	6.0	5.3	7.3	9.7
01Jan2000	04:45	9.3	6.1	5.3	7.3	9.3
01Jan2000	04:46	9.0	6.1	5.3	7.3	9.0
01Jan2000	04:47	8.8	6.1	5.3	7.3	8.8
01Jan2000	04:48	8.7	6.1	5.3	7.3	8.7
01Jan2000	04:49	8.5	6.1	5.3	7.3	8.5
01Jan2000	04:50	8.4	6.1	5.3	7.3	8.4
01Jan2000	04:51	8.2	6.1	5.3	7.4	8.2
01Jan2000	04:52	8.1	6.1	5.3	7.4	8.1
01Jan2000	04:53	7.9	6.1	5.3	7.4	7.9
01Jan2000	04:54	7.8	6.1	5.3	7.4	7.8
01Jan2000	04:55	7.6	6.1	5.3	7.4	7.6
01Jan2000	04:56	7.5	6.1	5.3	7.4	7.5
01Jan2000	04:57	7.3	6.1	5.3	7.4	7.3
01Jan2000	04:58	7.2	6.1	5.3	7.4	7.2
01Jan2000	04:59	7.0	6.1	5.3	7.4	7.0
01Jan2000	05:00	6.9	6.1	5.3	7.4	6.9
01Jan2000	05:01	6.8	6.1	5.3	7.4	6.8
01Jan2000	05:02	6.7	6.1	5.3	7.4	6.7
01Jan2000	05:03	6.7	6.1	5.3	7.4	6.7
01Jan2000	05:04	6.6	6.1	5.3	7.3	6.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	6.5	6.1	5.3	7.3	6.5
01Jan2000	05:06	6.4	6.1	5.3	7.3	6.4
01Jan2000	05:07	6.3	6.1	5.3	7.3	6.3
01Jan2000	05:08	6.2	6.1	5.3	7.3	6.2
01Jan2000	05:09	6.2	6.1	5.3	7.3	6.2
01Jan2000	05:10	6.1	6.1	5.3	7.3	6.1
01Jan2000	05:11	6.0	6.1	5.3	7.3	6.0
01Jan2000	05:12	5.9	6.0	5.3	7.3	5.9
01Jan2000	05:13	5.8	6.0	5.3	7.3	5.8
01Jan2000	05:14	5.8	6.0	5.3	7.3	5.8
01Jan2000	05:15	5.7	6.0	5.3	7.3	5.7
01Jan2000	05:16	5.7	6.0	5.3	7.3	5.7
01Jan2000	05:17	5.6	6.0	5.3	7.3	5.6
01Jan2000	05:18	5.5	6.0	5.3	7.3	5.5
01Jan2000	05:19	5.5	6.0	5.3	7.3	5.5
01Jan2000	05:20	5.4	6.0	5.3	7.3	5.4
01Jan2000	05:21	5.3	6.0	5.3	7.3	5.3
01Jan2000	05:22	5.3	6.0	5.3	7.3	5.3
01Jan2000	05:23	5.2	6.0	5.3	7.3	5.2
01Jan2000	05:24	5.2	6.0	5.3	7.3	5.2
01Jan2000	05:25	5.1	6.0	5.2	7.3	5.1
01Jan2000	05:26	5.1	6.0	5.2	7.3	5.1
01Jan2000	05:27	5.0	6.0	5.2	7.3	5.0
01Jan2000	05:28	5.0	6.0	5.2	7.3	5.0
01Jan2000	05:29	4.9	6.0	5.2	7.3	4.9
01Jan2000	05:30	4.9	6.0	5.2	7.3	4.9
01Jan2000	05:31	4.9	6.0	5.2	7.3	4.9
01Jan2000	05:32	4.8	6.0	5.2	7.3	4.8
01Jan2000	05:33	4.8	6.0	5.2	7.3	4.8
01Jan2000	05:34	4.8	6.0	5.2	7.3	4.8
01Jan2000	05:35	4.7	6.0	5.2	7.3	4.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	4.7	6.0	5.2	7.3	4.7
01Jan2000	05:37	4.6	6.0	5.2	7.3	4.6
01Jan2000	05:38	4.6	6.0	5.2	7.3	4.6
01Jan2000	05:39	4.6	6.0	5.2	7.3	4.6
01Jan2000	05:40	4.5	6.0	5.2	7.3	4.5
01Jan2000	05:41	4.5	6.0	5.2	7.3	4.5
01Jan2000	05:42	4.4	6.0	5.2	7.3	4.4
01Jan2000	05:43	4.4	6.0	5.2	7.3	4.4
01Jan2000	05:44	4.4	5.9	5.2	7.3	4.4
01Jan2000	05:45	4.3	5.9	5.2	7.3	4.3
01Jan2000	05:46	4.3	5.9	5.2	7.3	4.3
01Jan2000	05:47	4.3	5.9	5.2	7.3	4.3
01Jan2000	05:48	4.2	5.9	5.2	7.3	4.2
01Jan2000	05:49	4.2	5.9	5.2	7.3	4.2
01Jan2000	05:50	4.1	5.9	5.2	7.2	4.1
01Jan2000	05:51	4.1	5.9	5.2	7.2	4.1
01Jan2000	05:52	4.1	5.9	5.2	7.2	4.1
01Jan2000	05:53	4.1	5.9	5.2	7.2	4.1
01Jan2000	05:54	4.0	5.9	5.2	7.2	4.0
01Jan2000	05:55	4.0	5.9	5.2	7.2	4.0
01Jan2000	05:56	4.0	5.9	5.2	7.2	4.0
01Jan2000	05:57	4.0	5.9	5.2	7.2	4.0
01Jan2000	05:58	3.9	5.9	5.2	7.2	3.9
01Jan2000	05:59	3.9	5.9	5.1	7.2	3.9
01Jan2000	06:00	3.9	5.9	5.1	7.2	3.9
01Jan2000	06:01	3.9	5.9	5.1	7.2	3.9
01Jan2000	06:02	3.8	5.9	5.1	7.2	3.8
01Jan2000	06:03	3.8	5.9	5.1	7.2	3.8
01Jan2000	06:04	3.8	5.9	5.1	7.2	3.8
01Jan2000	06:05	3.5	5.9	5.1	7.2	3.5
01Jan2000	06:06	3.2	5.9	5.1	7.2	3.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	2.9	5.8	5.1	7.2	2.9
01Jan2000	06:08	2.6	5.8	5.1	7.2	2.6
01Jan2000	06:09	2.3	5.8	5.1	7.2	2.3
01Jan2000	06:10	2.0	5.8	5.1	7.2	2.0
01Jan2000	06:11	1.8	5.8	5.1	7.2	1.8
01Jan2000	06:12	1.5	5.8	5.1	7.2	1.5
01Jan2000	06:13	1.2	5.8	5.1	7.2	1.2
01Jan2000	06:14	0.9	5.8	5.1	7.1	0.9
01Jan2000	06:15	0.6	5.8	5.1	7.1	0.6
01Jan2000	06:16	0.3	5.8	5.1	7.1	0.3
01Jan2000	06:17	0.0	5.8	5.1	7.1	0.0



CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN C - PROPOSED DETENTION 26 (BMP K8)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1176	0	44116	1.01	0.000
1180	4	51527	1.18	4.391
1185	9	61356	1.41	10.896

NEWLAND SIERRA
BASIN C - PROPOSED DETENTION BASINS
KNOLLS BASIN
DETENTION 26 (BMP K8)

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 27

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2799	2798	2	1498.6	1495.6	95	0.52	0.27				
2798	2797	6	1495.6	1469	525	0.52	2.32	One side			
2797	2794	3	1463	1442	420						
2794	2794	1						1 of 2			
2796	2795	2	1474.8	1471.8	95	0.52	0.25				
2795	2794	6	1471.8	1448	380	0.52	1.88	One side			
2794	2794	1						2 of 2			
2794	2791	3	1442	1427	195						
2791	2791	1						1 of 2			
2793	2792	2	1451	1448	95	0.52	0.24				
2792	2791	6	1448	1433	195	0.52	1.58	One side			
2791	2791	1						2 of 2			
2791	2788	3	1427	1408	400						
2788	2788	1						1 of 2			
2790	2789	2	1436	1434	80	0.52	0.19				
2789	2788	6	1434	1414	325	0.48	2.58	One side			
2788	2788	1						2 of 2			
2788	2787	3	1408	1384							
2787	2787	10						Save to bank 1			
2785.5	2785	2	1605	1585	90	0.35	0.11				
2785	2780	5	1585	1432	1200						
2785	2780	8				0.35	4.19				
2780	2780	1						1 of 2			
2784	2783	2	1605	1592	100	0.35	0.25				
2783	2780	5	1592	1432	1200						
2783	2780	8				0.35	2.18				
2780	2780	1						2 of 2			
2780	2779	3	1426	1396	50						
2779	2779	1						1 of 2			
2779.4	2779.2	2	1494	1491	95	0.35	0.38				
2779.2	2779	5	1491	1403	1265						
2779.2	2779	8				0.35	1.67				
2779	2779	1						2 of 2			

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2779	2787	3	1397	1384	685						
2787	2787	1						1 of 2			
2787.4	2787.2	2	1405	1400	65	0.35	0.30				
2787.2	2787	5	1405	1390	155						
2787.2	2787	8				0.28	1.79				
2787	2787	1						2 of 2			
2787	2787	11						Add bank 1			
2787	2787	12						Clear bank 1			
2787	2786	3	1384	1350	200						
2786	2783	5	1350	1300	400						
2786	2783	8				0.25	3.89				
2783	2783	1						1 of 2			
2783.4	2783.2	2	1745	1730	90	0.3	0.29				
2783.2	2783	5	1730	1300	1275						
2783.2	2783	8				0.34	14.91				
2783	2783	1						2 of 2			
2783	2782	5	1300	1135	1410						
2783	2782	8				0.3	28.13				
2782	2777	5	1135	1040	670						
2782	2777	8				0.25	8.96				
2777	2777	1						1 of 2			
2781	2780	2	1445	1435	75	0.25	0.14				
2780	2779	5	1435	1395	300						
2780	2779	8				0.25	1.76				
2779	2778	5	1395	1305	585						
2779	2778	8				0.25	5.55				
2778	2777	5	1305	1040	1335						
2778	2777	8				0.25	16.86				
2777	2777	1						2 of 2			
2777	2776	5	1040	970	1200						
2777	2776	8				0.28	21.24				
2776	2772	5	970	930	930						
2776	2772	8				0.29	16.81				
2772	2772	1						1 of 2			
2775	2774	2	1155	1140	75	0.25	0.16				
2774	2773	5	1140	1035	440						
2774	2773	8				0.25	14.38				

 RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE
 Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT
 2003,1985,1981 HYDROLOGY MANUAL
 (c) Copyright 1982-2010 Advanced Engineering Software (aes)
 Ver. 17.0 Release Date: 07/01/2010 License ID 1355

Analysis prepared by:

FUSCOE ENGINEERING INC

***** DESCRIPTION OF STUDY *****
 * PROPOSED HYDROLOGY *
 * NO DETENTION *
 * 5 (mtn flow) - 8 *

FILE NAME: P-27.DAT
 TIME/DATE OF STUDY: 09:00 01/12/2015

 USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00
 6-HOUR DURATION PRECIPITATION (INCHES) = 3.500
 SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00
 SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90
 SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD
 NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS
 USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH	CROWN TO CROSSFALL	STREET-CROSSFALL: IN- / OUT-/PARK- SIDE / SIDE/ WAY	CURB HEIGHT	GUTTER-GEOMETRIES: WIDTH	LIP	HIKE	MANNING FACTOR
	(FT)	(FT)		(FT)	(FT)	(FT)	(FT)	(n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50	0.0313	0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET
 as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)
2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
 OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

 FLOW PROCESS FROM NODE 2799.00 TO NODE 2798.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
 UPSTREAM ELEVATION(FEET) = 1498.60
 DOWNSTREAM ELEVATION(FEET) = 1495.60
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.936
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.467

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SUBAREA RUNOFF(CFS) = 1.05
TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 1.05

FLOW PROCESS FROM NODE 2798.00 TO NODE 2797.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1495.60 DOWNSTREAM ELEVATION(FEET) = 1469.00
STREET LENGTH(FEET) = 525.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.95
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.31
HALFSTREET FLOOD WIDTH(FEET) = 9.44
AVERAGE FLOW VELOCITY(FEET/SEC.) = 4.91
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.55
STREET FLOW TRAVEL TIME(MIN.) = 1.78 Tc(MIN.) = 8.72
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.442
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .5200
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
SUBAREA AREA(ACRES) = 2.32 SUBAREA RUNOFF(CFS) = 7.77
TOTAL AREA(ACRES) = 2.6 PEAK FLOW RATE(CFS) = 8.68

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.37 HALFSTREET FLOOD WIDTH(FEET) = 11.97
FLOW VELOCITY(FEET/SEC.) = 5.60 DEPTH*VELOCITY(FT*FT/SEC.) = 2.05
LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2797.00 = 620.00 FEET.

FLOW PROCESS FROM NODE 2797.00 TO NODE 2794.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1463.00 DOWNSTREAM(FEET) = 1442.00
FLOW LENGTH(FEET) = 420.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 7.8 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 11.83
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 8.68
PIPE TRAVEL TIME(MIN.) = 0.59 Tc(MIN.) = 9.31
LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2794.00 = 1040.00 FEET.

FLOW PROCESS FROM NODE 2794.00 TO NODE 2794.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

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TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.31
 RAINFALL INTENSITY(INCH/HR) = 6.18
 TOTAL STREAM AREA(ACRES) = 2.59
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 8.68

FLOW PROCESS FROM NODE 2796.00 TO NODE 2795.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
 UPSTREAM ELEVATION(FEET) = 1474.80
 DOWNSTREAM ELEVATION(FEET) = 1471.80
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.936
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.467
 SUBAREA RUNOFF(CFS) = 0.97
 TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.97

FLOW PROCESS FROM NODE 2795.00 TO NODE 2794.00 IS CODE = 62

 >>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1471.80 DOWNSTREAM ELEVATION(FEET) = 1448.00
 STREET LENGTH(FEET) = 380.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 4.26
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.30
 HALFSTREET FLOOD WIDTH(FEET) = 8.44
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.13
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.51
 STREET FLOW TRAVEL TIME(MIN.) = 1.23 Tc(MIN.) = 8.17
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.718
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 1.88 SUBAREA RUNOFF(CFS) = 6.57
 TOTAL AREA(ACRES) = 2.1 PEAK FLOW RATE(CFS) = 7.44

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.34 HALFSTREET FLOOD WIDTH(FEET) = 10.72
 FLOW VELOCITY(FEET/SEC.) = 5.87 DEPTH*VELOCITY(FT*FT/SEC.) = 2.00
 LONGEST FLOWPATH FROM NODE 2796.00 TO NODE 2794.00 = 475.00 FEET.

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FLOW PROCESS FROM NODE 2794.00 TO NODE 2794.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 8.17
 RAINFALL INTENSITY(INCH/HR) = 6.72
 TOTAL STREAM AREA(ACRES) = 2.13
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.44

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	8.68	9.31	6.175	2.59
2	7.44	8.17	6.718	2.13

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	15.05	8.17	6.718
2	15.52	9.31	6.175

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 15.52 Tc(MIN.) = 9.31
 TOTAL AREA(ACRES) = 4.7
 LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2794.00 = 1040.00 FEET.

FLOW PROCESS FROM NODE 2794.00 TO NODE 2791.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1442.00 DOWNSTREAM(FEET) = 1427.00
 FLOW LENGTH(FEET) = 195.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.6 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 16.09
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 15.52
 PIPE TRAVEL TIME(MIN.) = 0.20 Tc(MIN.) = 9.51
 LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2791.00 = 1235.00 FEET.

FLOW PROCESS FROM NODE 2791.00 TO NODE 2791.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.51
 RAINFALL INTENSITY(INCH/HR) = 6.09
 TOTAL STREAM AREA(ACRES) = 4.72
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.52

FLOW PROCESS FROM NODE 2793.00 TO NODE 2792.00 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
 =====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
 UPSTREAM ELEVATION(FEET) = 1451.00
 DOWNSTREAM ELEVATION(FEET) = 1448.00
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.936
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.467
 SUBAREA RUNOFF(CFS) = 0.93
 TOTAL AREA(ACRES) = 0.24 TOTAL RUNOFF(CFS) = 0.93

 FLOW PROCESS FROM NODE 2792.00 TO NODE 2791.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>(STREET TABLE SECTION # 1 USED)<<<<<
 =====

UPSTREAM ELEVATION(FEET) = 1448.00 DOWNSTREAM ELEVATION(FEET) = 1433.00
 STREET LENGTH(FEET) = 195.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.84
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.28
 HALFSTREET FLOOD WIDTH(FEET) = 7.64
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.47
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.53
 STREET FLOW TRAVEL TIME(MIN.) = 0.59 Tc(MIN.) = 7.53
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.081

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .5200
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.520
 SUBAREA AREA(ACRES) = 1.58 SUBAREA RUNOFF(CFS) = 5.82
 TOTAL AREA(ACRES) = 1.8 PEAK FLOW RATE(CFS) = 6.70

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.32 HALFSTREET FLOOD WIDTH(FEET) = 9.83
 FLOW VELOCITY(FEET/SEC.) = 6.18 DEPTH*VELOCITY(FT*FT/SEC.) = 1.99
 LONGEST FLOWPATH FROM NODE 2793.00 TO NODE 2791.00 = 290.00 FEET.

 FLOW PROCESS FROM NODE 2791.00 TO NODE 2791.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 7.53

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RAINFALL INTENSITY(INCH/HR) = 7.08
TOTAL STREAM AREA(ACRES) = 1.82
PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.70

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	15.52	9.51	6.090	4.72
2	6.70	7.53	7.081	1.82

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.05	7.53	7.081
2	21.28	9.51	6.090

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 21.28 Tc(MIN.) = 9.51
TOTAL AREA(ACRES) = 6.5
LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2791.00 = 1235.00 FEET.

FLOW PROCESS FROM NODE 2791.00 TO NODE 2788.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1427.00 DOWNSTREAM(FEET) = 1408.00

FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 18.0 INCH PIPE IS 14.4 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 14.01

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 21.28

PIPE TRAVEL TIME(MIN.) = 0.48 Tc(MIN.) = 9.99

LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2788.00 = 1635.00 FEET.

FLOW PROCESS FROM NODE 2788.00 TO NODE 2788.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.99

RAINFALL INTENSITY(INCH/HR) = 5.90

TOTAL STREAM AREA(ACRES) = 6.54

PEAK FLOW RATE(CFS) AT CONFLUENCE = 21.28

FLOW PROCESS FROM NODE 2790.00 TO NODE 2789.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .5200

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1436.00

DOWNSTREAM ELEVATION(FEET) = 1434.00

ELEVATION DIFFERENCE(FEET) = 2.00

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SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.880
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.506
SUBAREA RUNOFF(CFS) = 0.74
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.74

FLOW PROCESS FROM NODE 2789.00 TO NODE 2788.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<

UPSTREAM ELEVATION(FEET) = 1434.00 DOWNSTREAM ELEVATION(FEET) = 1414.00
STREET LENGTH(FEET) = 325.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 1
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 5.00
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.31
HALFSTREET FLOOD WIDTH(FEET) = 9.10
AVERAGE FLOW VELOCITY(FEET/SEC.) = 5.28
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.63
STREET FLOW TRAVEL TIME(MIN.) = 1.03 Tc(MIN.) = 7.91
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.862
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .4800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.483
SUBAREA AREA(ACRES) = 2.58 SUBAREA RUNOFF(CFS) = 8.50
TOTAL AREA(ACRES) = 2.8 PEAK FLOW RATE(CFS) = 9.18

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.36 HALFSTREET FLOOD WIDTH(FEET) = 11.78
FLOW VELOCITY(FEET/SEC.) = 6.09 DEPTH*VELOCITY(FT*FT/SEC.) = 2.20
LONGEST FLOWPATH FROM NODE 2790.00 TO NODE 2788.00 = 405.00 FEET.

FLOW PROCESS FROM NODE 2788.00 TO NODE 2788.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.91
RAINFALL INTENSITY(INCH/HR) = 6.86
TOTAL STREAM AREA(ACRES) = 2.77
PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.18

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	21.28	9.99	5.901	6.54
2	9.18	7.91	6.862	2.77

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	27.48	7.91	6.862
2	29.17	9.99	5.901

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 29.17 Tc(MIN.) = 9.99
 TOTAL AREA(ACRES) = 9.3
 LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2788.00 = 1635.00 FEET.

FLOW PROCESS FROM NODE 2788.00 TO NODE 2787.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1408.00 DOWNSTREAM(FEET) = 1384.00
 FLOW LENGTH(FEET) = 215.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.1 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 21.25
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 29.17
 PIPE TRAVEL TIME(MIN.) = 0.17 Tc(MIN.) = 10.16
 LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2787.00 = 1850.00 FEET.

FLOW PROCESS FROM NODE 2787.00 TO NODE 2787.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2785.50 TO NODE 2785.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00

UPSTREAM ELEVATION(FEET) = 1605.00

DOWNSTREAM ELEVATION(FEET) = 1585.00

ELEVATION DIFFERENCE(FEET) = 20.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.945

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.247

SUBAREA RUNOFF(CFS) = 0.32

TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.32

FLOW PROCESS FROM NODE 2785.00 TO NODE 2780.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1585.00 DOWNSTREAM(FEET) = 1432.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1200.00 CHANNEL SLOPE = 0.1275
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1200 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

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NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.32
 FLOW VELOCITY(FEET/SEC) = 1.94 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 10.31 Tc(MIN.) = 16.25
 LONGEST FLOWPATH FROM NODE 2785.50 TO NODE 2780.00 = 1290.00 FEET.

FLOW PROCESS FROM NODE 2785.00 TO NODE 2780.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.311
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 4.19 SUBAREA RUNOFF(CFS) = 6.32
 TOTAL AREA(ACRES) = 4.3 TOTAL RUNOFF(CFS) = 6.49
 TC(MIN.) = 16.25

FLOW PROCESS FROM NODE 2780.00 TO NODE 2780.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 16.25
 RAINFALL INTENSITY(INCH/HR) = 4.31
 TOTAL STREAM AREA(ACRES) = 4.30
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 6.49

FLOW PROCESS FROM NODE 2784.00 TO NODE 2783.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
 UPSTREAM ELEVATION(FEET) = 1605.00
 DOWNSTREAM ELEVATION(FEET) = 1592.00
 ELEVATION DIFFERENCE(FEET) = 13.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
 SUBAREA RUNOFF(CFS) = 0.70
 TOTAL AREA(ACRES) = 0.25 TOTAL RUNOFF(CFS) = 0.70

FLOW PROCESS FROM NODE 2783.00 TO NODE 2780.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1592.00 DOWNSTREAM(FEET) = 1432.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1200.00 CHANNEL SLOPE = 0.1333
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1239 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.70
 FLOW VELOCITY(FEET/SEC) = 1.97 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

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TRAVEL TIME(MIN.) = 10.15 Tc(MIN.) = 16.41
LONGEST FLOWPATH FROM NODE 2784.00 TO NODE 2780.00 = 1300.00 FEET.

FLOW PROCESS FROM NODE 2783.00 TO NODE 2780.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.284
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 2.18 SUBAREA RUNOFF(CFS) = 3.27
TOTAL AREA(ACRES) = 2.4 TOTAL RUNOFF(CFS) = 3.64
TC(MIN.) = 16.41

FLOW PROCESS FROM NODE 2780.00 TO NODE 2780.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 16.41
RAINFALL INTENSITY(INCH/HR) = 4.28
TOTAL STREAM AREA(ACRES) = 2.43
PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.64

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	6.49	16.25	4.311	4.30
2	3.64	16.41	4.284	2.43

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	10.10	16.25	4.311
2	10.09	16.41	4.284

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 10.10 Tc(MIN.) = 16.25
TOTAL AREA(ACRES) = 6.7
LONGEST FLOWPATH FROM NODE 2784.00 TO NODE 2780.00 = 1300.00 FEET.

FLOW PROCESS FROM NODE 2780.00 TO NODE 2779.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(Feet) = 1426.00 DOWNSTREAM(Feet) = 1396.00
FLOW LENGTH(Feet) = 50.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.4 INCHES
PIPE-FLOW VELOCITY(Feet/Sec.) = 30.21
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 10.10

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PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 16.28
 LONGEST FLOWPATH FROM NODE 2784.00 TO NODE 2779.00 = 1350.00 FEET.

FLOW PROCESS FROM NODE 2779.00 TO NODE 2779.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 16.28
 RAINFALL INTENSITY(INCH/HR) = 4.31
 TOTAL STREAM AREA(ACRES) = 6.73
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 10.10

FLOW PROCESS FROM NODE 2779.40 TO NODE 2779.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
 UPSTREAM ELEVATION(FEET) = 1494.00
 DOWNSTREAM ELEVATION(FEET) = 1491.00
 ELEVATION DIFFERENCE(FEET) = 3.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.969
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.326
 SUBAREA RUNOFF(CFS) = 0.84
 TOTAL AREA(ACRES) = 0.38 TOTAL RUNOFF(CFS) = 0.84

FLOW PROCESS FROM NODE 2779.20 TO NODE 2779.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1491.00 DOWNSTREAM(FEET) = 1403.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1265.00 CHANNEL SLOPE = 0.0696
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0696 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.84
 FLOW VELOCITY(FEET/SEC) = 1.48 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 14.27 Tc(MIN.) = 23.24
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2779.00 = 1360.00 FEET.

FLOW PROCESS FROM NODE 2779.20 TO NODE 2779.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.423
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 1.67 SUBAREA RUNOFF(CFS) = 2.00
 TOTAL AREA(ACRES) = 2.0 TOTAL RUNOFF(CFS) = 2.46
 TC(MIN.) = 23.24

FLOW PROCESS FROM NODE 2779.00 TO NODE 2779.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 23.24
 RAINFALL INTENSITY(INCH/HR) = 3.42
 TOTAL STREAM AREA(ACRES) = 2.05
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.46

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	10.10	16.28	4.306	6.73
2	2.46	23.24	3.423	2.05

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.82	16.28	4.306
2	10.48	23.24	3.423

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.82 Tc(MIN.) = 16.28
 TOTAL AREA(ACRES) = 8.8
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2779.00 = 1360.00 FEET.

FLOW PROCESS FROM NODE 2779.00 TO NODE 2787.00 IS CODE = 31

 >>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 1397.00 DOWNSTREAM(FEET) = 1384.00
 FLOW LENGTH(FEET) = 685.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 12.9 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 8.74
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 11.82
 PIPE TRAVEL TIME(MIN.) = 1.31 Tc(MIN.) = 17.59
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2787.00 = 2045.00 FEET.

FLOW PROCESS FROM NODE 2787.00 TO NODE 2787.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 17.59
 RAINFALL INTENSITY(INCH/HR) = 4.10
 TOTAL STREAM AREA(ACRES) = 8.78
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.82

FLOW PROCESS FROM NODE 2787.40 TO NODE 2787.20 IS CODE = 21

 >>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<


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=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 65.00
UPSTREAM ELEVATION(FEET) = 1405.00
DOWNSTREAM ELEVATION(FEET) = 1400.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.514
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.658
SUBAREA RUNOFF(CFS) = 0.91
TOTAL AREA(ACRES) = 0.30 TOTAL RUNOFF(CFS) = 0.91
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*****
FLOW PROCESS FROM NODE 2787.20 TO NODE 2787.00 IS CODE = 53
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>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====

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```

ELEVATION DATA: UPSTREAM(FEET) = 1405.00 DOWNSTREAM(FEET) = 1390.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 155.00 CHANNEL SLOPE = 0.0968
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0968 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.91
FLOW VELOCITY(FEET/SEC) = 1.74 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.48 Tc(MIN.) = 7.00
LONGEST FLOWPATH FROM NODE 2787.40 TO NODE 2787.00 = 220.00 FEET.
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*****
FLOW PROCESS FROM NODE 2787.20 TO NODE 2787.00 IS CODE = 81
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>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.425
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2900
SUBAREA AREA(ACRES) = 1.79 SUBAREA RUNOFF(CFS) = 3.72
TOTAL AREA(ACRES) = 2.1 TOTAL RUNOFF(CFS) = 4.50
Tc(MIN.) = 7.00
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*****
FLOW PROCESS FROM NODE 2787.00 TO NODE 2787.00 IS CODE = 1
=====

```

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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

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```

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 7.00
RAINFALL INTENSITY(INCH/HR) = 7.42
TOTAL STREAM AREA(ACRES) = 2.09
PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.50

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.82	17.59	4.097	8.78
2	4.50	7.00	7.425	2.09

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO

CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.02	7.00	7.425
2	14.30	17.59	4.097

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 14.30 Tc(MIN.) = 17.59

TOTAL AREA(ACRES) = 10.9

LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2787.00 = 2045.00 FEET.

FLOW PROCESS FROM NODE 2787.00 TO NODE 2787.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	14.30	17.59	4.097	10.87

LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2787.00 = 2045.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	29.17	10.16	5.838	9.31

LONGEST FLOWPATH FROM NODE 2799.00 TO NODE 2787.00 = 1850.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	37.43	10.16	5.838
2	34.77	17.59	4.097

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 37.43 Tc(MIN.) = 10.16

TOTAL AREA(ACRES) = 20.2

FLOW PROCESS FROM NODE 2787.00 TO NODE 2787.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2787.00 TO NODE 2786.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1384.00 DOWNSTREAM(FEET) = 1350.00
 FLOW LENGTH(FEET) = 200.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 13.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 26.35
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 37.43
 PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 10.28
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2786.00 = 2245.00 FEET.

FLOW PROCESS FROM NODE 2786.00 TO NODE 2783.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1350.00 DOWNSTREAM(FEET) = 1300.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 400.00 CHANNEL SLOPE = 0.1250
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1183 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 37.43
FLOW VELOCITY(FEET/SEC) = 6.44 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.04 Tc(MIN.) = 11.32
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2783.00 = 2645.00 FEET.

FLOW PROCESS FROM NODE 2786.00 TO NODE 2783.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.444
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3901
SUBAREA AREA(ACRES) = 3.89 SUBAREA RUNOFF(CFS) = 5.29
TOTAL AREA(ACRES) = 24.1 TOTAL RUNOFF(CFS) = 51.12
Tc(MIN.) = 11.32

FLOW PROCESS FROM NODE 2783.00 TO NODE 2783.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 11.32
RAINFALL INTENSITY(INCH/HR) = 5.44
TOTAL STREAM AREA(ACRES) = 24.07
PEAK FLOW RATE(CFS) AT CONFLUENCE = 51.12

FLOW PROCESS FROM NODE 2783.40 TO NODE 2783.20 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1745.00
DOWNSTREAM ELEVATION(FEET) = 1730.00
ELEVATION DIFFERENCE(FEET) = 15.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.341
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.911
SUBAREA RUNOFF(CFS) = 0.69
TOTAL AREA(ACRES) = 0.29 TOTAL RUNOFF(CFS) = 0.69

FLOW PROCESS FROM NODE 2783.20 TO NODE 2783.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1730.00 DOWNSTREAM(FEET) = 1300.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1275.00 CHANNEL SLOPE = 0.3373
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2030 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.69
FLOW VELOCITY(FEET/SEC) = 2.52 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 8.42 Tc(MIN.) = 14.76
LONGEST FLOWPATH FROM NODE 2783.40 TO NODE 2783.00 = 1365.00 FEET.

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*****
FLOW PROCESS FROM NODE 2783.20 TO NODE 2783.00 IS CODE = 81
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>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.587
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3400
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3392
SUBAREA AREA(ACRES) = 14.91 SUBAREA RUNOFF(CFS) = 23.25
TOTAL AREA(ACRES) = 15.2 TOTAL RUNOFF(CFS) = 23.65
TC(MIN.) = 14.76

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*****
FLOW PROCESS FROM NODE 2783.00 TO NODE 2783.00 IS CODE = 1
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>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

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```

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 14.76
RAINFALL INTENSITY(INCH/HR) = 4.59
TOTAL STREAM AREA(ACRES) = 15.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 23.65

```

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	51.12	11.32	5.444	24.07
2	23.65	14.76	4.587	15.20

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	69.25	11.32	5.444
2	66.72	14.76	4.587

```

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 69.25 Tc(MIN.) = 11.32
TOTAL AREA(ACRES) = 39.3
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2783.00 = 2645.00 FEET.

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*****
FLOW PROCESS FROM NODE 2783.00 TO NODE 2782.00 IS CODE = 53
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>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1300.00 DOWNSTREAM(FEET) = 1135.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1410.00 CHANNEL SLOPE = 0.1170
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1128 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 69.25
FLOW VELOCITY(FEET/SEC) = 7.71 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.05 Tc(MIN.) = 14.37
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2782.00 = 4055.00 FEET.
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*****
FLOW PROCESS FROM NODE 2783.00 TO NODE 2782.00 IS CODE = 81
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```

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.668
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3410
SUBAREA AREA(ACRES) = 28.13 SUBAREA RUNOFF(CFS) = 39.39
TOTAL AREA(ACRES) = 67.4 TOTAL RUNOFF(CFS) = 107.30
TC(MIN.) = 14.37
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```
*****
FLOW PROCESS FROM NODE 2782.00 TO NODE 2777.00 IS CODE = 53
-----
```

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1135.00 DOWNSTREAM(FEET) = 1040.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 670.00 CHANNEL SLOPE = 0.1418
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1295 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 107.30
FLOW VELOCITY(FEET/SEC) = 9.56 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.17 Tc(MIN.) = 15.53
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2777.00 = 4725.00 FEET.
```

```
*****
FLOW PROCESS FROM NODE 2782.00 TO NODE 2777.00 IS CODE = 81
-----
```

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.439
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3303
SUBAREA AREA(ACRES) = 8.96 SUBAREA RUNOFF(CFS) = 9.94
TOTAL AREA(ACRES) = 76.4 TOTAL RUNOFF(CFS) = 111.96
TC(MIN.) = 15.53
```

```
*****
FLOW PROCESS FROM NODE 2777.00 TO NODE 2777.00 IS CODE = 1
-----
```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.53
RAINFALL INTENSITY(INCH/HR) = 4.44
TOTAL STREAM AREA(ACRES) = 76.36
```

PEAK FLOW RATE(CFS) AT CONFLUENCE = P-27.TXT
111.96

FLOW PROCESS FROM NODE 2781.00 TO NODE 2780.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1445.00
DOWNSTREAM ELEVATION(FEET) = 1435.00
ELEVATION DIFFERENCE(FEET) = 10.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.151
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.068
SUBAREA RUNOFF(CFS) = 0.28
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.28

FLOW PROCESS FROM NODE 2780.00 TO NODE 2779.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1435.00 DOWNSTREAM(FEET) = 1395.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 300.00 CHANNEL SLOPE = 0.1333
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1239 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.28
FLOW VELOCITY(FEET/SEC) = 1.97 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.54 Tc(MIN.) = 8.69
LONGEST FLOWPATH FROM NODE 2781.00 TO NODE 2779.00 = 375.00 FEET.

FLOW PROCESS FROM NODE 2780.00 TO NODE 2779.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.457
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 1.76 SUBAREA RUNOFF(CFS) = 2.84
TOTAL AREA(ACRES) = 1.9 TOTAL RUNOFF(CFS) = 3.07
TC(MIN.) = 8.69

FLOW PROCESS FROM NODE 2779.00 TO NODE 2778.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1395.00 DOWNSTREAM(FEET) = 1305.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 585.00 CHANNEL SLOPE = 0.1538
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1369 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 3.07
FLOW VELOCITY(FEET/SEC) = 3.01 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.24 Tc(MIN.) = 11.93

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LONGEST FLOWPATH FROM NODE 2781.00 TO NODE 2778.00 = 960.00 FEET.

FLOW PROCESS FROM NODE 2779.00 TO NODE 2778.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.264	
*USER SPECIFIED(SUBAREA):	
USER-SPECIFIED RUNOFF COEFFICIENT = .2500	
S.C.S. CURVE NUMBER (AMC II) = 0	
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500	
SUBAREA AREA(ACRES) = 5.55	SUBAREA RUNOFF(CFS) = 7.30
TOTAL AREA(ACRES) = 7.5	TOTAL RUNOFF(CFS) = 9.80
TC(MIN.) = 11.93	

FLOW PROCESS FROM NODE 2778.00 TO NODE 2777.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1305.00	DOWNSTREAM(FEET) = 1040.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1335.00	CHANNEL SLOPE = 0.1985
SLOPE ADJUSTMENT CURVE USED:	
EFFECTIVE SLOPE = .1593 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
CHANNEL FLOW THRU SUBAREA(CFS) = 9.80	
FLOW VELOCITY(FEET/SEC) = 4.78	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.66	Tc(MIN.) = 16.58
LONGEST FLOWPATH FROM NODE 2781.00 TO NODE 2777.00 = 2295.00 FEET.	

FLOW PROCESS FROM NODE 2778.00 TO NODE 2777.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.256	
*USER SPECIFIED(SUBAREA):	
USER-SPECIFIED RUNOFF COEFFICIENT = .2500	
S.C.S. CURVE NUMBER (AMC II) = 0	
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500	
SUBAREA AREA(ACRES) = 16.86	SUBAREA RUNOFF(CFS) = 17.94
TOTAL AREA(ACRES) = 24.3	TOTAL RUNOFF(CFS) = 25.86
TC(MIN.) = 16.58	

FLOW PROCESS FROM NODE 2777.00 TO NODE 2777.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2	
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) = 16.58	
RAINFALL INTENSITY(INCH/HR) = 4.26	
TOTAL STREAM AREA(ACRES) = 24.31	
PEAK FLOW RATE(CFS) AT CONFLUENCE = 25.86	

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	111.96	15.53	4.439	76.36
2	25.86	16.58	4.256	24.31

P-27.TXT

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	136.19	15.53	4.439
2	133.21	16.58	4.256

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 136.19 Tc(MIN.) = 15.53
TOTAL AREA(ACRES) = 100.7
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2777.00 = 4725.00 FEET.

FLOW PROCESS FROM NODE 2777.00 TO NODE 2776.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1040.00 DOWNSTREAM(FEET) = 970.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1200.00 CHANNEL SLOPE = 0.0583
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0583 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 136.19
FLOW VELOCITY(FEET/SEC) = 6.95 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.88 Tc(MIN.) = 18.41
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2776.00 = 5925.00 FEET.

FLOW PROCESS FROM NODE 2777.00 TO NODE 2776.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.978
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3056
SUBAREA AREA(ACRES) = 21.24 SUBAREA RUNOFF(CFS) = 23.66
TOTAL AREA(ACRES) = 121.9 TOTAL RUNOFF(CFS) = 148.17
Tc(MIN.) = 18.41

FLOW PROCESS FROM NODE 2776.00 TO NODE 2772.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 970.00 DOWNSTREAM(FEET) = 930.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 930.00 CHANNEL SLOPE = 0.0430
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0430 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 148.17
FLOW VELOCITY(FEET/SEC) = 6.14 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.53 Tc(MIN.) = 20.94
LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2772.00 = 6855.00 FEET.

FLOW PROCESS FROM NODE 2776.00 TO NODE 2772.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

P-27.TXT

```

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.661
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3037
SUBAREA AREA(ACRES) = 16.81 SUBAREA RUNOFF(CFS) = 17.85
TOTAL AREA(ACRES) = 138.7 TOTAL RUNOFF(CFS) = 154.22
TC(MIN.) = 20.94
*****
FLOW PROCESS FROM NODE 2772.00 TO NODE 2772.00 IS CODE = 1
-----
>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 20.94
RAINFALL INTENSITY(INCH/HR) = 3.66
TOTAL STREAM AREA(ACRES) = 138.72
PEAK FLOW RATE(CFS) AT CONFLUENCE = 154.22
*****
FLOW PROCESS FROM NODE 2775.00 TO NODE 2774.00 IS CODE = 21
-----
>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<
=====
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1155.00
DOWNSTREAM ELEVATION(FEET) = 1140.00
ELEVATION DIFFERENCE(FEET) = 15.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.151
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.068
SUBAREA RUNOFF(CFS) = 0.32
TOTAL AREA(ACRES) = 0.16 TOTAL RUNOFF(CFS) = 0.32
*****
FLOW PROCESS FROM NODE 2774.00 TO NODE 2773.00 IS CODE = 53
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
ELEVATION DATA: UPSTREAM(FEET) = 1140.00 DOWNSTREAM(FEET) = 1035.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 440.00 CHANNEL SLOPE = 0.2386
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1762 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.32
FLOW VELOCITY(FEET/SEC) = 2.35 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.12 Tc(MIN.) = 9.27
LONGEST FLOWPATH FROM NODE 2775.00 TO NODE 2773.00 = 515.00 FEET.
*****
FLOW PROCESS FROM NODE 2774.00 TO NODE 2773.00 IS CODE = 81
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.193
*USER SPECIFIED(SUBAREA):

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USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
 SUBAREA AREA(ACRES) = 14.38 SUBAREA RUNOFF(CFS) = 22.26
 TOTAL AREA(ACRES) = 14.5 TOTAL RUNOFF(CFS) = 22.51
 TC(MIN.) = 9.27

 FLOW PROCESS FROM NODE 2773.00 TO NODE 2772.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1035.00	DOWNSTREAM(FEET) =	930.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	990.00	CHANNEL SLOPE =	0.1061

SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1045 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 22.51
 FLOW VELOCITY(FEET/SEC) = 5.11 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 3.23 Tc(MIN.) = 12.50
 LONGEST FLOWPATH FROM NODE 2775.00 TO NODE 2772.00 = 1505.00 FEET.

 FLOW PROCESS FROM NODE 2773.00 TO NODE 2772.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.106
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2600
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2549
 SUBAREA AREA(ACRES) = 14.24 SUBAREA RUNOFF(CFS) = 18.91
 TOTAL AREA(ACRES) = 28.8 TOTAL RUNOFF(CFS) = 37.47
 TC(MIN.) = 12.50

 FLOW PROCESS FROM NODE 2772.00 TO NODE 2772.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.50
 RAINFALL INTENSITY(INCH/HR) = 5.11
 TOTAL STREAM AREA(ACRES) = 28.78
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 37.47

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	154.22	20.94	3.661	138.72
2	37.47	12.50	5.106	28.78

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	148.04	12.50	5.106
2	181.09	20.94	3.661

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COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 181.09 Tc(MIN.) = 20.94
 TOTAL AREA(ACRES) = 167.5
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 2772.00 = 6855.00 FEET.

FLOW PROCESS FROM NODE 2772.00 TO NODE 27.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
 >>>>TRAVELTIME THRU SUBAREA<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 930.00 DOWNSTREAM(FEET) = 920.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 385.00 CHANNEL SLOPE = 0.0260
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .0260 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 181.09
 FLOW VELOCITY(FEET/SEC) = 5.10 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 1.26 Tc(MIN.) = 22.20
 LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 27.00 = 7240.00 FEET.

FLOW PROCESS FROM NODE 2772.00 TO NODE 27.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.526
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3300
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2960
 SUBAREA AREA(ACRES) = 3.57 SUBAREA RUNOFF(CFS) = 4.15
 TOTAL AREA(ACRES) = 171.1 TOTAL RUNOFF(CFS) = 181.09
 TC(MIN.) = 22.20
 NOTE: PEAK FLOW RATE DEFAULTED TO UPSTREAM VALUE

FLOW PROCESS FROM NODE 27.00 TO NODE 27.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2771.00 TO NODE 2770.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2500
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
 UPSTREAM ELEVATION(FEET) = 1450.00
 DOWNSTREAM ELEVATION(FEET) = 1445.00
 ELEVATION DIFFERENCE(FEET) = 5.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 8.196
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.705
 SUBAREA RUNOFF(CFS) = 0.59
 TOTAL AREA(ACRES) = 0.35 TOTAL RUNOFF(CFS) = 0.59

FLOW PROCESS FROM NODE 2770.00 TO NODE 2769.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1445.00 DOWNSTREAM(FEET) = 1390.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 305.00 CHANNEL SLOPE = 0.1803
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1502 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.59
FLOW VELOCITY(FEET/SEC) = 2.17 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.34 Tc(MIN.) = 10.54
LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 2769.00 = 395.00 FEET.
=====

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*****
FLOW PROCESS FROM NODE 2770.00 TO NODE 2769.00 IS CODE = 81
=====

```

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.701
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 1.97 SUBAREA RUNOFF(CFS) = 2.81
TOTAL AREA(ACRES) = 2.3 TOTAL RUNOFF(CFS) = 3.31
TC(MIN.) = 10.54
=====

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*****
FLOW PROCESS FROM NODE 2769.00 TO NODE 2765.00 IS CODE = 53
=====

```

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

```

=====
ELEVATION DATA: UPSTREAM(FEET) = 1390.00 DOWNSTREAM(FEET) = 1170.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 820.00 CHANNEL SLOPE = 0.2683
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1861 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 3.31
FLOW VELOCITY(FEET/SEC) = 3.60 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.80 Tc(MIN.) = 14.34
LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 2765.00 = 1215.00 FEET.
=====

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*****
FLOW PROCESS FROM NODE 2769.00 TO NODE 2765.00 IS CODE = 81
=====

```

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

```

=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.674
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 8.79 SUBAREA RUNOFF(CFS) = 10.27
TOTAL AREA(ACRES) = 11.1 TOTAL RUNOFF(CFS) = 12.98
TC(MIN.) = 14.34
=====

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*****
FLOW PROCESS FROM NODE 2765.00 TO NODE 2765.00 IS CODE = 1
=====

```

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```

=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 14.34
=====

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RAINFALL INTENSITY(INCH/HR) = 4.67
TOTAL STREAM AREA(ACRES) = 11.11
PEAK FLOW RATE(CFS) AT CONFLUENCE = 12.98

FLOW PROCESS FROM NODE 2768.00 TO NODE 2767.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 75.00
UPSTREAM ELEVATION(FEET) = 1300.00
DOWNSTREAM ELEVATION(FEET) = 1295.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.041
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.395
SUBAREA RUNOFF(CFS) = 0.57
TOTAL AREA(ACRES) = 0.31 TOTAL RUNOFF(CFS) = 0.57

FLOW PROCESS FROM NODE 2767.00 TO NODE 2766.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1295.00 DOWNSTREAM(FEET) = 1230.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 430.00 CHANNEL SLOPE = 0.1512
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1356 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.57
FLOW VELOCITY(FEET/SEC) = 2.06 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.48 Tc(MIN.) = 10.52
LONGEST FLOWPATH FROM NODE 2768.00 TO NODE 2766.00 = 505.00 FEET.

FLOW PROCESS FROM NODE 2767.00 TO NODE 2766.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.709
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 5.50 SUBAREA RUNOFF(CFS) = 7.85
TOTAL AREA(ACRES) = 5.8 TOTAL RUNOFF(CFS) = 8.29
TC(MIN.) = 10.52

FLOW PROCESS FROM NODE 2766.00 TO NODE 2765.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1230.00 DOWNSTREAM(FEET) = 1170.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 650.00 CHANNEL SLOPE = 0.0923
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0923 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 8.29
FLOW VELOCITY(FEET/SEC) = 3.44 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

P-27.TXT

TRAVEL TIME(MIN.) = 3.15 Tc(MIN.) = 13.66
LONGEST FLOWPATH FROM NODE 2768.00 TO NODE 2765.00 = 1155.00 FEET.

FLOW PROCESS FROM NODE 2766.00 TO NODE 2765.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.822
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500
SUBAREA AREA(ACRES) = 15.49 SUBAREA RUNOFF(CFS) = 18.67
TOTAL AREA(ACRES) = 21.3 TOTAL RUNOFF(CFS) = 25.67
TC(MIN.) = 13.66

FLOW PROCESS FROM NODE 2765.00 TO NODE 2765.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 13.66
RAINFALL INTENSITY(INCH/HR) = 4.82
TOTAL STREAM AREA(ACRES) = 21.30
PEAK FLOW RATE(CFS) AT CONFLUENCE = 25.67

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	12.98	14.34	4.674	11.11
2	25.67	13.66	4.822	21.30

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	38.05	13.66	4.822
2	37.87	14.34	4.674

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 38.05 Tc(MIN.) = 13.66
TOTAL AREA(ACRES) = 32.4
LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 2765.00 = 1215.00 FEET.

FLOW PROCESS FROM NODE 2765.00 TO NODE 2711.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1170.00 DOWNSTREAM(FEET) = 1105.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 600.00 CHANNEL SLOPE = 0.1083
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1063 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 38.05
FLOW VELOCITY(FEET/SEC) = 6.13 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.63 Tc(MIN.) = 15.30

P-27.TXT

LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 2711.00 = 1815.00 FEET.

FLOW PROCESS FROM NODE 2765.00 TO NODE 2711.00 IS CODE = 81

----->>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<-----

=====100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.483

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.2500

SUBAREA AREA(ACRES) = 11.00 SUBAREA RUNOFF(CFS) = 12.33

TOTAL AREA(ACRES) = 43.4 TOTAL RUNOFF(CFS) = 48.66

TC(MIN.) = 15.30

FLOW PROCESS FROM NODE 2711.00 TO NODE 27.00 IS CODE = 53

----->>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<-----

----->>>>TRAVELTIME THRU SUBAREA<<<<-----

=====ELEVATION DATA: UPSTREAM(FEET) = 1105.00 DOWNSTREAM(FEET) = 920.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 1460.00 CHANNEL SLOPE = 0.1267

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1195 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 48.66

FLOW VELOCITY(FEET/SEC) = 7.06 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 3.45 Tc(MIN.) = 18.74

LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 27.00 = 3275.00 FEET.

FLOW PROCESS FROM NODE 2711.00 TO NODE 27.00 IS CODE = 81

----->>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<-----

=====100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.932

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2600

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.2530

SUBAREA AREA(ACRES) = 18.20 SUBAREA RUNOFF(CFS) = 18.61

TOTAL AREA(ACRES) = 61.6 TOTAL RUNOFF(CFS) = 61.28

TC(MIN.) = 18.74

FLOW PROCESS FROM NODE 27.00 TO NODE 27.00 IS CODE = 11

----->>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<-----

=====** MAIN STREAM CONFLUENCE DATA **=====

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	61.28	18.74	3.932	61.61

LONGEST FLOWPATH FROM NODE 2771.00 TO NODE 27.00 = 3275.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	181.09	22.20	3.526	171.07

LONGEST FLOWPATH FROM NODE 2779.40 TO NODE 27.00 = 7240.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	214.18	18.74	3.932
2	236.03	22.20	3.526

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 236.03 Tc(MIN.) = 22.20

TOTAL AREA(ACRES) = 232.7

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 232.7 TC(MIN.) = 22.20

PEAK FLOW RATE(CFS) = 236.03

=====

END OF RATIONAL METHOD ANALYSIS

Basin 27

Node to Node		Code	C Factor	Area (ac.)	C x A
2799	2798	2	0.52	0.27	0.14
2798	2797	6	0.52	2.32	1.21
2796	2795	2	0.52	0.25	0.13
2795	2794	6	0.52	1.88	0.98
2793	2792	2	0.52	0.24	0.12
2792	2791	6	0.52	1.58	0.82
2790	2789	2	0.52	0.19	0.10
2789	2788	6	0.48	2.58	1.24
			Total	9.31	4.74
			Avg C =	0.51	

Basin 27, Western Summit

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/17/2017

TIME OF CONCENTRATION 10 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 9.3 ACRES

RUNOFF COEFFICIENT 0.51

PEAK DISCHARGE 29.17 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 10 DISCHARGE (CFS) = 1

TIME (MIN) = 20 DISCHARGE (CFS) = 1

TIME (MIN) = 30 DISCHARGE (CFS) = 1.1

TIME (MIN) = 40 DISCHARGE (CFS) = 1.1

TIME (MIN) = 50 DISCHARGE (CFS) = 1.1

TIME (MIN) = 60 DISCHARGE (CFS) = 1.1

TIME (MIN) = 70 DISCHARGE (CFS) = 1.2

TIME (MIN) = 80 DISCHARGE (CFS) = 1.2

TIME (MIN) = 90 DISCHARGE (CFS) = 1.3

TIME (MIN) = 100 DISCHARGE (CFS) = 1.3

TIME (MIN) = 110 DISCHARGE (CFS) = 1.4

TIME (MIN) = 120 DISCHARGE (CFS) = 1.5

TIME (MIN) = 130 DISCHARGE (CFS) = 1.6

TIME (MIN) = 140 DISCHARGE (CFS) = 1.6

TIME (MIN) = 150 DISCHARGE (CFS) = 1.8

TIME (MIN) = 160 DISCHARGE (CFS) = 1.9

TIME (MIN) = 170 DISCHARGE (CFS) = 2.1
TIME (MIN) = 180 DISCHARGE (CFS) = 2.2
TIME (MIN) = 190 DISCHARGE (CFS) = 2.5
TIME (MIN) = 200 DISCHARGE (CFS) = 2.7
TIME (MIN) = 210 DISCHARGE (CFS) = 3.3
TIME (MIN) = 220 DISCHARGE (CFS) = 3.8
TIME (MIN) = 230 DISCHARGE (CFS) = 5.5
TIME (MIN) = 240 DISCHARGE (CFS) = 6.6
TIME (MIN) = 250 DISCHARGE (CFS) = 29.17
TIME (MIN) = 260 DISCHARGE (CFS) = 4.4
TIME (MIN) = 270 DISCHARGE (CFS) = 3
TIME (MIN) = 280 DISCHARGE (CFS) = 2.3
TIME (MIN) = 290 DISCHARGE (CFS) = 1.9
TIME (MIN) = 300 DISCHARGE (CFS) = 1.7
TIME (MIN) = 310 DISCHARGE (CFS) = 1.5
TIME (MIN) = 320 DISCHARGE (CFS) = 1.4
TIME (MIN) = 330 DISCHARGE (CFS) = 1.3
TIME (MIN) = 340 DISCHARGE (CFS) = 1.2
TIME (MIN) = 350 DISCHARGE (CFS) = 1.1
TIME (MIN) = 360 DISCHARGE (CFS) = 1
TIME (MIN) = 370 DISCHARGE (CFS) = 0

Detention 27 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top pane shows a hierarchical tree of project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing a detailed configuration for the selected 'Basin Inflow' element. The configuration includes fields for 'Basin Name', 'Element Name', 'Description', 'Downstream', 'Area (MI2)', and 'Flow Method'.

Detention 27

- Basin Models
 - Basin 27
 - Basin Inflow**
 - Discharge Gage
 - Detention Basin 27
 - Outlets
 - Outlet 1
- Meteorologic Models
 - Sierra
- Control Specifications
 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 2787 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
- Paired Data
 - Elevation-Storage Functions
 - Basin 27 Stage-Storage

Components Compute Results

Source Inflow Options

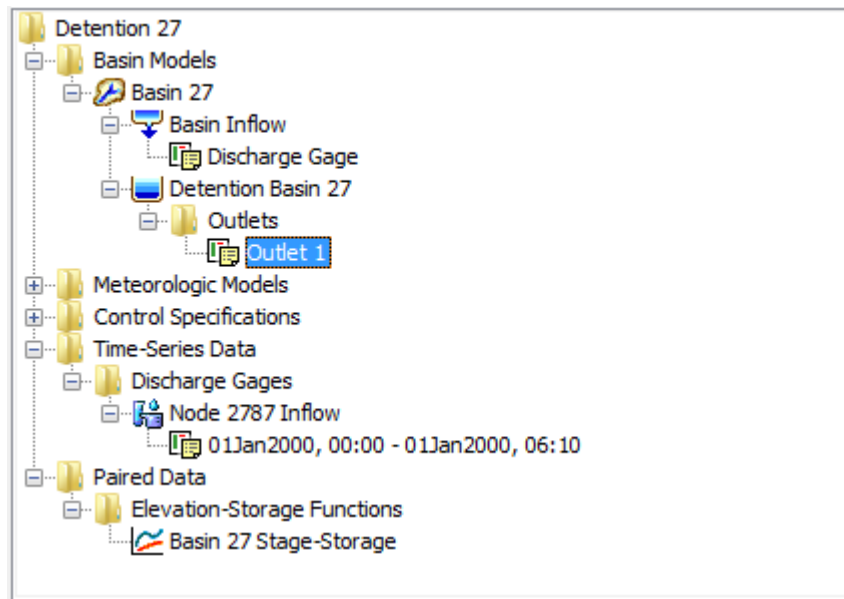
Basin Name: Basin 27
Element Name: Basin Inflow

Description: Node 2787

Downstream: Detention Basin 27

Area (MI2): 0.015

Flow Method: Discharge Gage



Components Compute Results

Reservoir Outlet 1 Options

Basin Name: Basin 27
Element Name: Detention Basin 27

Method: Orifice Outlet

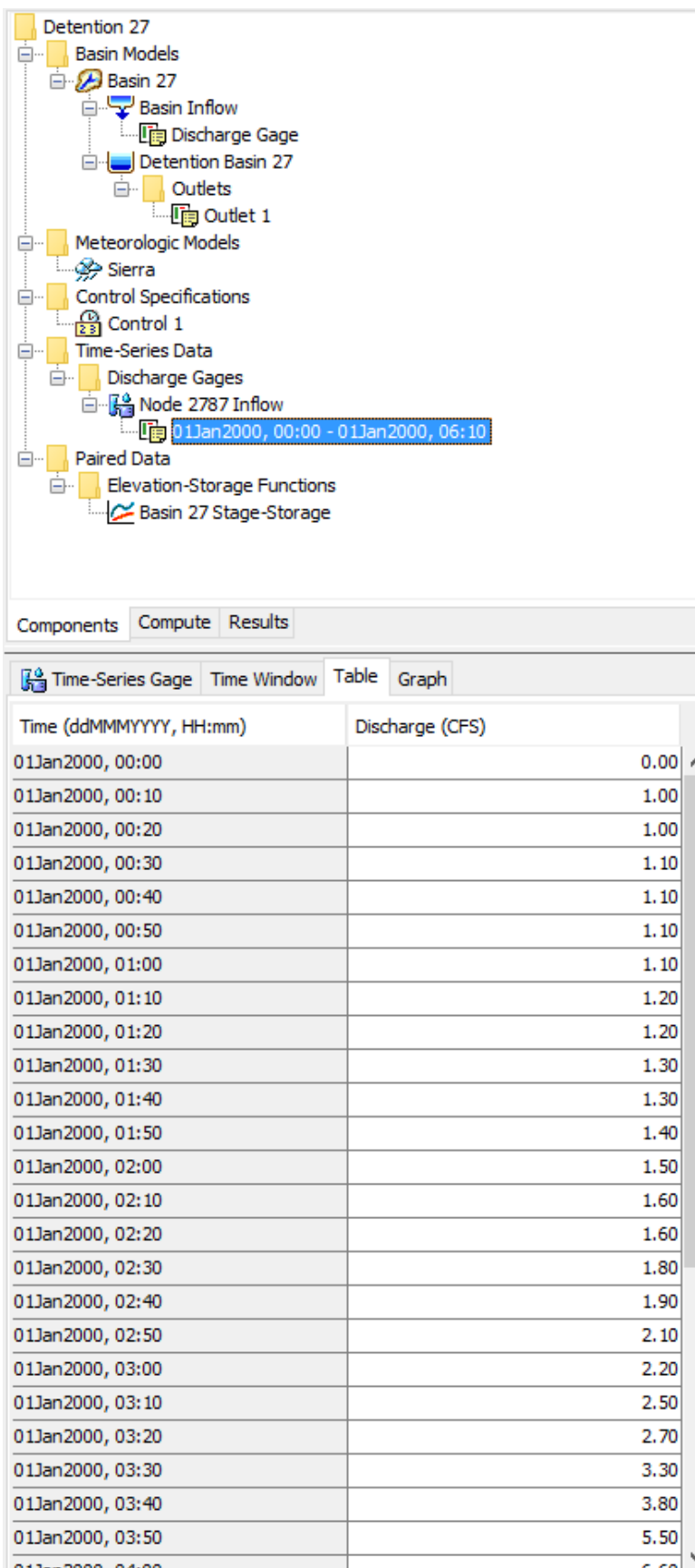
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 2

*Area (FT²) 3.14

*Coefficient: 0.60



Detention 27

- Basin Models
 - Basin 27
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 - Discharge Gage
 - Detention Basin 27
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 - Outlet 1
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- Control Specifications
- Time-Series Data
 - Discharge Gages
 - Node 2787 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:10
- Paired Data
 - Elevation-Storage Functions
 - Basin 27 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
4.0	1.560
9.0	4.455

Project: Detention 27 Simulation Run: Run 1
Reservoir: Detention Basin 27

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 27
End of Run:	01Jan2000, 06:10	Meteorologic Model:	Sierra
Compute Time:	18Jan2017, 06:41:38	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	29.2 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:10
Peak Discharge:	10.6 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:17
Inflow Volume:	1.4 (AC-FT)	Peak Storage:	1.0 (AC-FT)
Discharge Volume:	0.6 (AC-FT)	Peak Elevation:	2.5 (FT)

Observed Hydrograph at Gage Node 2787 Inflow

Peak Discharge:	29.2 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:10
Mean Abs Error:	2.3 (CFS)	RMS Error:	4.0 (CFS)
Volume:	1.4 (AC-FT)	Volume Residual:	-0.8 (AC-FT)
Nash-Sutcliffe:	0.011		

Project: Detention 27 Simulation Run: Run 1
Reservoir: Detention Basin 27

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 27
End of Run: 01Jan2000, 06:10 Meteorologic Model: Sierra
Compute Time: 18Jan2017, 06:41:38 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:02	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:03	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:04	0.4	0.0	0.0	0.0	0.4
01Jan2000	00:05	0.5	0.0	0.0	0.0	0.5
01Jan2000	00:06	0.6	0.0	0.0	0.0	0.6
01Jan2000	00:07	0.7	0.0	0.0	0.0	0.7
01Jan2000	00:08	0.8	0.0	0.0	0.0	0.8
01Jan2000	00:09	0.9	0.0	0.0	0.0	0.9
01Jan2000	00:10	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:11	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:12	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:13	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:14	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:15	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:16	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:17	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:18	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:19	1.0	0.0	0.0	0.0	1.0
01Jan2000	00:20	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:21	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:22	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:23	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:24	1.0	0.0	0.1	0.0	1.0
01Jan2000	00:25	1.0	0.0	0.1	0.0	1.0

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:27	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:28	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:29	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:30	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:31	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:32	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:33	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:34	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:35	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:36	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:37	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:38	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:39	1.1	0.0	0.1	0.0	1.1
01Jan2000	00:40	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:41	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:42	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:43	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:44	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:45	1.1	0.1	0.1	0.0	1.1
01Jan2000	00:46	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:47	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:48	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:49	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:50	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:51	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:52	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:53	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:54	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:55	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:56	1.1	0.1	0.2	0.0	1.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:58	1.1	0.1	0.2	0.0	1.1
01Jan2000	00:59	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:00	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:01	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:02	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:03	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:04	1.1	0.1	0.2	0.0	1.1
01Jan2000	01:05	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:06	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:07	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:08	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:09	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:10	1.2	0.1	0.2	0.0	1.2
01Jan2000	01:11	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:12	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:13	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:14	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:15	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:16	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:17	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:18	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:19	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:20	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:21	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:22	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:23	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:24	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:25	1.2	0.1	0.3	0.0	1.2
01Jan2000	01:26	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:27	1.3	0.1	0.3	0.0	1.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:29	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:30	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:31	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:32	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:33	1.3	0.1	0.3	0.0	1.3
01Jan2000	01:34	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:35	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:36	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:37	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:38	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:39	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:40	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:41	1.3	0.1	0.4	0.0	1.3
01Jan2000	01:42	1.3	0.2	0.4	0.0	1.3
01Jan2000	01:43	1.3	0.2	0.4	0.0	1.3
01Jan2000	01:44	1.3	0.2	0.4	0.0	1.3
01Jan2000	01:45	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:46	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:47	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:48	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:49	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:50	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:51	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:52	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:53	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:54	1.4	0.2	0.4	0.0	1.4
01Jan2000	01:55	1.4	0.2	0.5	0.0	1.4
01Jan2000	01:56	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:57	1.5	0.2	0.5	0.0	1.5
01Jan2000	01:58	1.5	0.2	0.5	0.0	1.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:00	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:01	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:02	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:03	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:04	1.5	0.2	0.5	0.0	1.5
01Jan2000	02:05	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:06	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:07	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:08	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:09	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:10	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:11	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:12	1.6	0.2	0.5	0.0	1.6
01Jan2000	02:13	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:14	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:15	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:16	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:17	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:18	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:19	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:20	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:21	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:22	1.6	0.2	0.6	0.0	1.6
01Jan2000	02:23	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:24	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:25	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:26	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:27	1.7	0.2	0.6	0.0	1.7
01Jan2000	02:28	1.8	0.2	0.6	0.0	1.8
01Jan2000	02:29	1.8	0.3	0.6	0.0	1.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	1.8	0.3	0.6	0.0	1.8
01Jan2000	02:31	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:32	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:33	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:34	1.8	0.3	0.7	0.0	1.8
01Jan2000	02:35	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:36	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:37	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:38	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:39	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:40	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:41	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:42	1.9	0.3	0.7	0.0	1.9
01Jan2000	02:43	2.0	0.3	0.7	0.0	2.0
01Jan2000	02:44	2.0	0.3	0.7	0.0	2.0
01Jan2000	02:45	2.0	0.3	0.7	0.0	2.0
01Jan2000	02:46	2.0	0.3	0.8	0.0	2.0
01Jan2000	02:47	2.0	0.3	0.8	0.0	2.0
01Jan2000	02:48	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:49	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:50	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:51	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:52	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:53	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:54	2.1	0.3	0.8	0.0	2.1
01Jan2000	02:55	2.2	0.3	0.8	0.0	2.2
01Jan2000	02:56	2.2	0.3	0.8	0.0	2.2
01Jan2000	02:57	2.2	0.3	0.8	0.0	2.2
01Jan2000	02:58	2.2	0.3	0.8	0.0	2.2
01Jan2000	02:59	2.2	0.3	0.9	0.0	2.2
01Jan2000	03:00	2.2	0.3	0.9	0.0	2.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	2.2	0.3	0.9	0.0	2.2
01Jan2000	03:02	2.3	0.3	0.9	0.0	2.3
01Jan2000	03:03	2.3	0.3	0.9	0.0	2.3
01Jan2000	03:04	2.3	0.3	0.9	0.0	2.3
01Jan2000	03:05	2.4	0.4	0.9	0.0	2.4
01Jan2000	03:06	2.4	0.4	0.9	0.0	2.4
01Jan2000	03:07	2.4	0.4	0.9	0.0	2.4
01Jan2000	03:08	2.4	0.4	0.9	0.0	2.4
01Jan2000	03:09	2.5	0.4	0.9	0.0	2.5
01Jan2000	03:10	2.5	0.4	0.9	0.0	2.5
01Jan2000	03:11	2.5	0.4	1.0	0.0	2.5
01Jan2000	03:12	2.5	0.4	1.0	0.0	2.5
01Jan2000	03:13	2.6	0.4	1.0	0.0	2.6
01Jan2000	03:14	2.6	0.4	1.0	0.0	2.6
01Jan2000	03:15	2.6	0.4	1.0	0.0	2.6
01Jan2000	03:16	2.6	0.4	1.0	0.0	2.6
01Jan2000	03:17	2.6	0.4	1.0	0.0	2.6
01Jan2000	03:18	2.7	0.4	1.0	0.0	2.7
01Jan2000	03:19	2.7	0.4	1.0	0.0	2.7
01Jan2000	03:20	2.7	0.4	1.0	0.0	2.7
01Jan2000	03:21	2.8	0.4	1.0	0.0	2.8
01Jan2000	03:22	2.8	0.4	1.1	0.0	2.8
01Jan2000	03:23	2.9	0.4	1.1	0.0	2.9
01Jan2000	03:24	2.9	0.4	1.1	0.0	2.9
01Jan2000	03:25	3.0	0.4	1.1	0.0	3.0
01Jan2000	03:26	3.1	0.4	1.1	0.0	3.1
01Jan2000	03:27	3.1	0.4	1.1	0.0	3.1
01Jan2000	03:28	3.2	0.4	1.1	0.0	3.2
01Jan2000	03:29	3.2	0.4	1.1	0.0	3.2
01Jan2000	03:30	3.3	0.4	1.1	0.0	3.3
01Jan2000	03:31	3.3	0.5	1.2	0.0	3.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	3.4	0.5	1.2	0.0	3.4
01Jan2000	03:33	3.4	0.5	1.2	0.0	3.4
01Jan2000	03:34	3.5	0.5	1.2	0.0	3.5
01Jan2000	03:35	3.6	0.5	1.2	0.0	3.6
01Jan2000	03:36	3.6	0.5	1.2	0.0	3.6
01Jan2000	03:37	3.6	0.5	1.2	0.0	3.6
01Jan2000	03:38	3.7	0.5	1.2	0.0	3.7
01Jan2000	03:39	3.8	0.5	1.3	0.0	3.8
01Jan2000	03:40	3.8	0.5	1.3	0.0	3.8
01Jan2000	03:41	4.0	0.5	1.3	0.0	4.0
01Jan2000	03:42	4.1	0.5	1.3	0.0	4.1
01Jan2000	03:43	4.3	0.5	1.3	0.0	4.3
01Jan2000	03:44	4.5	0.5	1.3	0.0	4.5
01Jan2000	03:45	4.6	0.5	1.3	0.0	4.6
01Jan2000	03:46	4.8	0.5	1.4	0.0	4.8
01Jan2000	03:47	5.0	0.5	1.4	0.0	5.0
01Jan2000	03:48	5.2	0.5	1.4	0.0	5.2
01Jan2000	03:49	5.3	0.6	1.4	0.0	5.3
01Jan2000	03:50	5.5	0.6	1.4	0.0	5.5
01Jan2000	03:51	5.6	0.6	1.5	0.0	5.6
01Jan2000	03:52	5.7	0.6	1.5	0.0	5.7
01Jan2000	03:53	5.8	0.6	1.5	0.0	5.8
01Jan2000	03:54	5.9	0.6	1.5	0.0	5.9
01Jan2000	03:55	6.0	0.6	1.5	0.0	6.0
01Jan2000	03:56	6.2	0.6	1.6	0.0	6.2
01Jan2000	03:57	6.3	0.6	1.6	0.0	6.3
01Jan2000	03:58	6.4	0.6	1.6	0.0	6.4
01Jan2000	03:59	6.5	0.6	1.6	0.0	6.5
01Jan2000	04:00	6.6	0.6	1.6	0.0	6.6
01Jan2000	04:01	8.9	0.7	1.7	0.0	8.9
01Jan2000	04:02	11.1	0.7	1.7	0.0	11.1

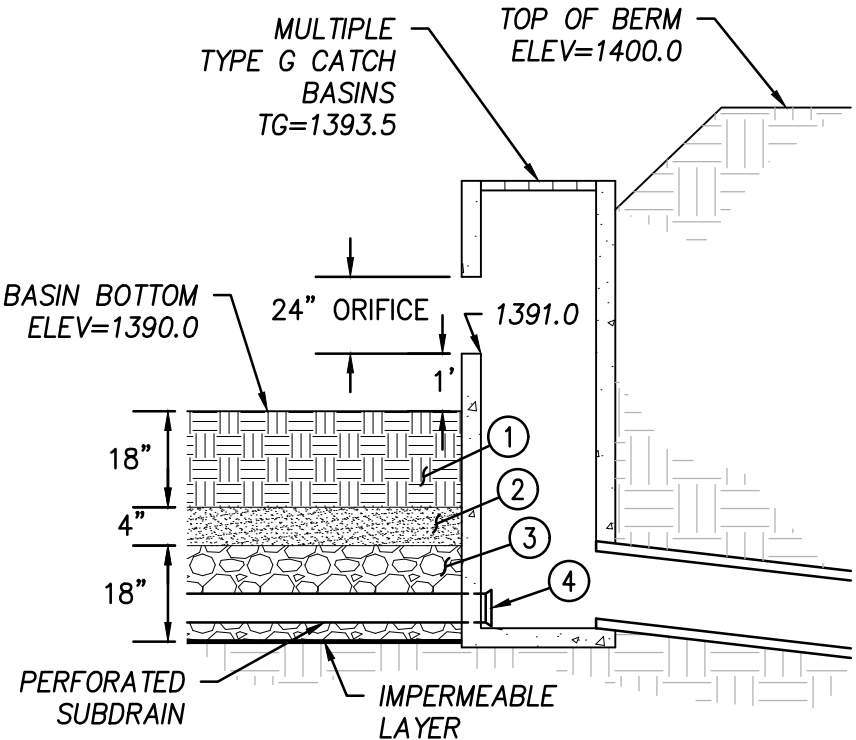
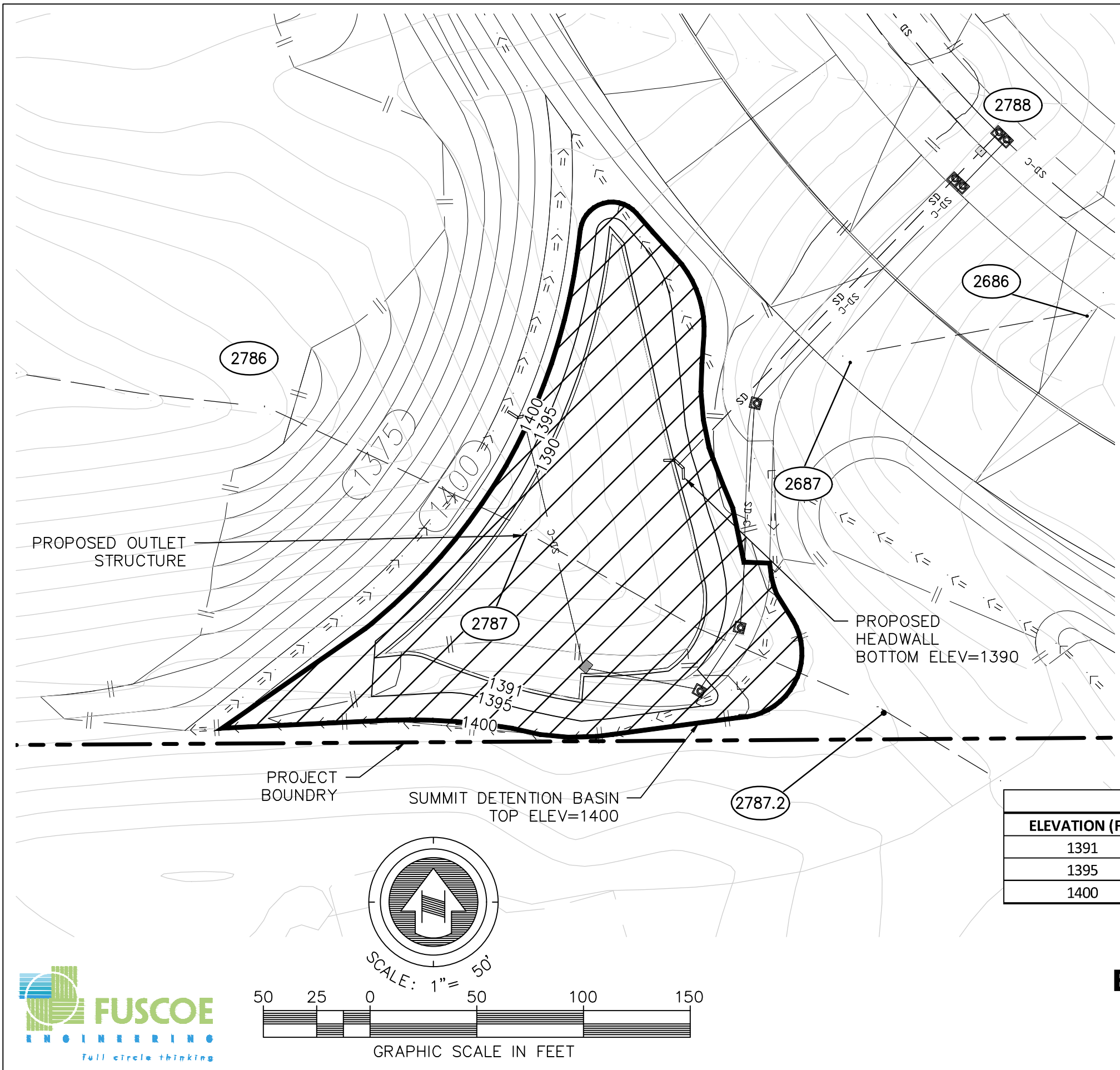
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	13.4	0.7	1.8	0.0	13.4
01Jan2000	04:04	15.6	0.7	1.8	0.0	15.6
01Jan2000	04:05	17.9	0.7	1.9	0.0	17.9
01Jan2000	04:06	20.1	0.8	1.9	0.0	20.1
01Jan2000	04:07	22.4	0.8	2.0	0.9	22.4
01Jan2000	04:08	24.7	0.8	2.1	4.2	24.7
01Jan2000	04:09	26.9	0.8	2.1	5.8	26.9
01Jan2000	04:10	29.2	0.9	2.2	7.2	29.2
01Jan2000	04:11	26.7	0.9	2.3	8.2	26.7
01Jan2000	04:12	24.2	0.9	2.4	9.0	24.2
01Jan2000	04:13	21.7	0.9	2.4	9.6	21.7
01Jan2000	04:14	19.3	1.0	2.4	10.0	19.3
01Jan2000	04:15	16.8	1.0	2.5	10.4	16.8
01Jan2000	04:16	14.3	1.0	2.5	10.6	14.3
01Jan2000	04:17	11.8	1.0	2.5	10.6	11.8
01Jan2000	04:18	9.4	1.0	2.5	10.6	9.4
01Jan2000	04:19	6.9	1.0	2.5	10.6	6.9
01Jan2000	04:20	4.4	1.0	2.5	10.4	4.4
01Jan2000	04:21	4.3	1.0	2.4	10.1	4.3
01Jan2000	04:22	4.1	0.9	2.4	9.9	4.1
01Jan2000	04:23	4.0	0.9	2.4	9.7	4.0
01Jan2000	04:24	3.8	0.9	2.4	9.4	3.8
01Jan2000	04:25	3.7	0.9	2.4	9.2	3.7
01Jan2000	04:26	3.6	0.9	2.4	8.9	3.6
01Jan2000	04:27	3.4	0.9	2.3	8.7	3.4
01Jan2000	04:28	3.3	0.9	2.3	8.5	3.3
01Jan2000	04:29	3.1	0.9	2.3	8.2	3.1
01Jan2000	04:30	3.0	0.9	2.3	8.0	3.0
01Jan2000	04:31	2.9	0.9	2.3	7.7	2.9
01Jan2000	04:32	2.9	0.9	2.2	7.5	2.9
01Jan2000	04:33	2.8	0.9	2.2	7.2	2.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	2.7	0.9	2.2	7.0	2.7
01Jan2000	04:35	2.6	0.9	2.2	6.7	2.6
01Jan2000	04:36	2.6	0.9	2.2	6.5	2.6
01Jan2000	04:37	2.5	0.8	2.2	6.2	2.5
01Jan2000	04:38	2.4	0.8	2.2	6.0	2.4
01Jan2000	04:39	2.4	0.8	2.1	5.8	2.4
01Jan2000	04:40	2.3	0.8	2.1	5.5	2.3
01Jan2000	04:41	2.3	0.8	2.1	5.3	2.3
01Jan2000	04:42	2.2	0.8	2.1	5.1	2.2
01Jan2000	04:43	2.2	0.8	2.1	4.8	2.2
01Jan2000	04:44	2.1	0.8	2.1	4.6	2.1
01Jan2000	04:45	2.1	0.8	2.1	4.4	2.1
01Jan2000	04:46	2.1	0.8	2.1	4.2	2.1
01Jan2000	04:47	2.0	0.8	2.1	4.0	2.0
01Jan2000	04:48	2.0	0.8	2.1	3.8	2.0
01Jan2000	04:49	1.9	0.8	2.1	3.6	1.9
01Jan2000	04:50	1.9	0.8	2.1	3.4	1.9
01Jan2000	04:51	1.9	0.8	2.0	3.2	1.9
01Jan2000	04:52	1.9	0.8	2.0	3.1	1.9
01Jan2000	04:53	1.8	0.8	2.0	2.9	1.8
01Jan2000	04:54	1.8	0.8	2.0	2.8	1.8
01Jan2000	04:55	1.8	0.8	2.0	2.6	1.8
01Jan2000	04:56	1.8	0.8	2.0	2.5	1.8
01Jan2000	04:57	1.8	0.8	2.0	2.4	1.8
01Jan2000	04:58	1.7	0.8	2.0	2.3	1.7
01Jan2000	04:59	1.7	0.8	2.0	2.2	1.7
01Jan2000	05:00	1.7	0.8	2.0	2.1	1.7
01Jan2000	05:01	1.7	0.8	2.0	2.0	1.7
01Jan2000	05:02	1.7	0.8	2.0	2.0	1.7
01Jan2000	05:03	1.6	0.8	2.0	1.9	1.6
01Jan2000	05:04	1.6	0.8	2.0	1.9	1.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	1.6	0.8	2.0	1.8	1.6
01Jan2000	05:06	1.6	0.8	2.0	1.8	1.6
01Jan2000	05:07	1.6	0.8	2.0	1.7	1.6
01Jan2000	05:08	1.5	0.8	2.0	1.7	1.5
01Jan2000	05:09	1.5	0.8	2.0	1.7	1.5
01Jan2000	05:10	1.5	0.8	2.0	1.6	1.5
01Jan2000	05:11	1.5	0.8	2.0	1.6	1.5
01Jan2000	05:12	1.5	0.8	2.0	1.6	1.5
01Jan2000	05:13	1.5	0.8	2.0	1.5	1.5
01Jan2000	05:14	1.5	0.8	2.0	1.5	1.5
01Jan2000	05:15	1.4	0.8	2.0	1.5	1.4
01Jan2000	05:16	1.4	0.8	2.0	1.5	1.4
01Jan2000	05:17	1.4	0.8	2.0	1.5	1.4
01Jan2000	05:18	1.4	0.8	2.0	1.5	1.4
01Jan2000	05:19	1.4	0.8	2.0	1.5	1.4
01Jan2000	05:20	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:21	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:22	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:23	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:24	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:25	1.4	0.8	2.0	1.4	1.4
01Jan2000	05:26	1.3	0.8	2.0	1.4	1.3
01Jan2000	05:27	1.3	0.8	2.0	1.4	1.3
01Jan2000	05:28	1.3	0.8	2.0	1.4	1.3
01Jan2000	05:29	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:30	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:31	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:32	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:33	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:34	1.3	0.8	2.0	1.3	1.3
01Jan2000	05:35	1.2	0.8	2.0	1.3	1.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	1.2	0.8	2.0	1.3	1.2
01Jan2000	05:37	1.2	0.8	2.0	1.3	1.2
01Jan2000	05:38	1.2	0.8	2.0	1.3	1.2
01Jan2000	05:39	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:40	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:41	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:42	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:43	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:44	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:45	1.2	0.8	2.0	1.2	1.2
01Jan2000	05:46	1.1	0.8	2.0	1.2	1.1
01Jan2000	05:47	1.1	0.8	2.0	1.2	1.1
01Jan2000	05:48	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:49	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:50	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:51	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:52	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:53	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:54	1.1	0.8	2.0	1.1	1.1
01Jan2000	05:55	1.0	0.8	2.0	1.1	1.0
01Jan2000	05:56	1.0	0.8	2.0	1.1	1.0
01Jan2000	05:57	1.0	0.8	2.0	1.1	1.0
01Jan2000	05:58	1.0	0.8	2.0	1.0	1.0
01Jan2000	05:59	1.0	0.8	2.0	1.0	1.0
01Jan2000	06:00	1.0	0.8	2.0	1.0	1.0
01Jan2000	06:01	0.9	0.8	2.0	1.0	0.9
01Jan2000	06:02	0.8	0.8	2.0	0.9	0.8
01Jan2000	06:03	0.7	0.8	2.0	0.9	0.7
01Jan2000	06:04	0.6	0.8	2.0	0.8	0.6
01Jan2000	06:05	0.5	0.8	2.0	0.7	0.5
01Jan2000	06:06	0.4	0.8	2.0	0.6	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	06:07	0.3	0.8	2.0	0.4	0.3
01Jan2000	06:08	0.2	0.8	2.0	0.3	0.2
01Jan2000	06:09	0.1	0.8	2.0	0.2	0.1
01Jan2000	06:10	0.0	0.8	2.0	0.0	0.0



- CONSTRUCTION NOTES:**
- ① 18" BIORETENTION SOIL MEDIA
 - ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
 - ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
 - ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN C - PROPOSED DETENTION 27 (BMP S2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1391	0	14150	0.32	0.000
1395	4	20145	0.46	1.575
1400	9	29305	0.67	4.489

NEWLAND SIERRA
BASIN C - PROPOSED DETENTION BASINS
SUMMIT BASIN
DETENTION 27 (BMP S2)

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 28



Newland Sierra

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2860	2859	2	1407	1395	60	0.9	0.05				
2859	2858	6	1395	1216	1068	0.89	0.81	2 sides			
2858	2857	3	1210	1140	400						
2857	2857	1						1 of 2			
2856	2855	2	1215	1198	90	0.88	0.07				
2855	2857	6	1198	1146	295	0.88	0.23	2 sides			
2857	2857	1						2 of 2			
2857	2854	3	1140	1080	410						
2854	2854	1						1 of 2			
2853	2852	2	1146	1133	90	0.88	0.07				
2852	2854	6	1133	1086	308	0.88	0.23	2 sides			
2854	2854	1						2 of 2			
2854	2851	3	1080	1019	328						
2851	2851	1						1 of 2			
2850	2849	2	1086	1070	92	0.88	0.07				
2849	2851	6	1070	1025	233	0.89	0.18	2 sides			
2851	2851	1						2 of 2			
2851	2848	3	1019	980	328						
2848	2828	5	980	979	15		*				
2828	2828	10						Save Bank 1			
2847	2846	2	1730	1695	100	0.35	0.33				
2846	2845	5	1695	1440	515						
2846	2845	8				0.35	3.06				
2845	2844	5	1440	1325	395						
2845	2844	8				0.35	9.88				
2844	2843	3	1325	1305	80						
2843	2843	1						1 of 2			
2842	2841	2	1395	1390	100	0.35	0.11				
2841	2840	5	1390	1345	253						
2841	2840	8				0.35	1.72				
2840	2841	3	1339	1329	37						
2839	2843	5	1335	1305	178		*				
2843	2843	1						2 of 2			
2843	2838	5	1305	1165	773						
2843	2838	8				0.35	6.24				
2838	2838	1						1 of 2			



Newland Sierra

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Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2837	2836	2	1670	1640	95	0.35	0.14				
2836	2835	5	1640	1166	1224						
2836	2835	8				0.35	14.49				
2835	2838	3	1166	1160	50						
2838	2838	1						2 of 2			
2838	2838.5	5	1160	1115	340		*				
2838.5	2838.5	1						1 OF 2			
2834	2833	2	1380	1355	80	0.25	0.06				
2833	2838.5	5	1355	1115	665		*				
2838.5	2838.5	1						2 OF 2			
2838.5	2832	5	1115	996	720						
2838.5	2832	8				0.25	8.35				
2832	2832	1						1 OF 2			
2831	2830	2	1250	1205	100	0.25	0.18				
2830	2829	5	1205	1005	425						
2830	2829	8				0.25	7.31				
2829	2832	3	1005	995	56						
2832	2832	1						2 of 2			
2832	2828	3	995	979	73						
2828	2828	11						Add Bank 1			
2828	2828	12						Clear Bank 1			
2828	2827	3	979	946	358						
2827	2827	1						1 of 2			
2826	2825	2	1025	1012	95	0.88	0.07				
2825	2824	6	1012	960	394	0.88	0.37	2 Sides			
2824	2823	3	954	947	85						
2823	2827	5	947	946	26		*				
2827	2827	1						2 of 2			
2827	2822	3	946	945	15						
2822	28	5	945	925	112		*				
28	28	10						Save Bank 1			
2821	2820	2	1736	1707	100	0.35	0.28				
2820	2819	5	1707	1500	460						
2820	2819	8				0.35	3.50				
2819	2818	5	1500	1200	1130						
2819	2818	8				0.35	16.92				

[illegible]

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fuscoe Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* PROPOSED HYDROLOGY *
* SUBBASIN 28 *
* FEBRUARY 2016 *

FILE NAME: P-28.DAT

TIME/DATE OF STUDY: 10:12 02/04/2016

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	18.0	8.0	0.020/0.020/0.020	0.50	1.50 0.0312 0.125	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN
OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

FLOW PROCESS FROM NODE 2860.00 TO NODE 2859.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 60.00

UPSTREAM ELEVATION(FEET) = 1407.00

DOWNSTREAM ELEVATION(FEET) = 1395.00

ELEVATION DIFFERENCE(FEET) = 12.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.294

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 0.41

TOTAL AREA(ACRES) = 0.05 TOTAL RUNOFF(CFS) = 0.41

FLOW PROCESS FROM NODE 2859.00 TO NODE 2858.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) = 1395.00 DOWNSTREAM ELEVATION(FEET) = 1216.00

STREET LENGTH(FEET) = 1068.00 CURB HEIGHT(INCHES) = 6.0

STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00

INSIDE STREET CROSSFALL(DECIMAL) = 0.020

OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2

STREET PARKWAY CROSSFALL(DECIMAL) = 0.020

Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 3.74

STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:

STREET FLOW DEPTH(FEET) = 0.21

HALFSTREET FLOOD WIDTH(FEET) = 4.06

AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.61

PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.37

STREET FLOW TRAVEL TIME(MIN.) = 2.69 T_c(MIN.) = 3.99

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.891

SUBAREA AREA(ACRES) = 0.81 SUBAREA RUNOFF(CFS) = 6.65

TOTAL AREA(ACRES) = 0.9 PEAK FLOW RATE(CFS) = 7.06

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.25 HALFSTREET FLOOD WIDTH(FEET) = 6.05

FLOW VELOCITY(FEET/SEC.) = 7.30 DEPTH*VELOCITY(FT*FT/SEC.) = 1.80

LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2858.00 = 1128.00 FEET.

FLOW PROCESS FROM NODE 2858.00 TO NODE 2857.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1210.00 DOWNSTREAM(FEET) = 1140.00

FLOW LENGTH(FEET) = 400.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 5.0 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 17.57

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 7.06

PIPE TRAVEL TIME(MIN.) = 0.37 Tc(MIN.) = 4.37

LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2857.00 = 1528.00 FEET.

FLOW PROCESS FROM NODE 2857.00 TO NODE 2857.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 4.37

RAINFALL INTENSITY(INCH/HR) = 9.22

TOTAL STREAM AREA(ACRES) = 0.86

PEAK FLOW RATE(CFS) AT CONFLUENCE = 7.06

FLOW PROCESS FROM NODE 2856.00 TO NODE 2855.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
UPSTREAM ELEVATION(FEET) = 1215.00
DOWNSTREAM ELEVATION(FEET) = 1198.00
ELEVATION DIFFERENCE(FEET) = 17.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.744
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.57
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.57

FLOW PROCESS FROM NODE 2855.00 TO NODE 2857.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1198.00 DOWNSTREAM ELEVATION(FEET) = 1146.00
STREET LENGTH(FEET) = 295.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.50
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.16
HALFSTREET FLOOD WIDTH(FEET) = 1.50
AVERAGE FLOW VELOCITY(FEET/SEC.) = 7.92
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.24
STREET FLOW TRAVEL TIME(MIN.) = 0.62 T_c(MIN.) = 2.36
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
SUBAREA AREA(ACRES) = 0.23 SUBAREA RUNOFF(CFS) = 1.87
TOTAL AREA(ACRES) = 0.3 PEAK FLOW RATE(CFS) = 2.43

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.18 HALFSTREET FLOOD WIDTH(FEET) = 2.46

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FLOW VELOCITY(FEET/SEC.) = 6.81 DEPTH*VELOCITY(FT*FT/SEC.) = 1.19
LONGEST FLOWPATH FROM NODE 2856.00 TO NODE 2857.00 = 385.00 FEET.

FLOW PROCESS FROM NODE 2857.00 TO NODE 2857.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 2.36
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.30
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.43

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	7.06	4.37	9.222	0.86
2	2.43	2.36	9.222	0.30

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	6.26	2.36	9.222
2	9.50	4.37	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 9.50 Tc(MIN.) = 4.37
TOTAL AREA(ACRES) = 1.2
LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2857.00 = 1528.00 FEET.

FLOW PROCESS FROM NODE 2857.00 TO NODE 2854.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1140.00 DOWNSTREAM(FEET) = 1080.00
FLOW LENGTH(FEET) = 410.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 17.91
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 9.50
 PIPE TRAVEL TIME(MIN.) = 0.38 T_c(MIN.) = 4.75
 LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2854.00 = 1938.00 FEET.

FLOW PROCESS FROM NODE 2854.00 TO NODE 2854.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 4.75
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 1.16
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 9.50

FLOW PROCESS FROM NODE 2853.00 TO NODE 2852.00 IS CODE = 21

 >>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 90.00
 UPSTREAM ELEVATION(FEET) = 1146.00
 DOWNSTREAM ELEVATION(FEET) = 1133.00
 ELEVATION DIFFERENCE(FEET) = 13.00
 SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.744
 WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
 SUBAREA RUNOFF(CFS) = 0.57
 TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.57

FLOW PROCESS FROM NODE 2852.00 TO NODE 2854.00 IS CODE = 62

 >>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<
 >>>>(STREET TABLE SECTION # 1 USED)<<<<

=====

UPSTREAM ELEVATION(FEET) = 1133.00 DOWNSTREAM ELEVATION(FEET) = 1086.00
 STREET LENGTH(FEET) = 308.00 CURB HEIGHT(INCHES) = 6.0
 STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
 INSIDE STREET CROSSFALL(DECIMAL) = 0.020
 OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
 STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
 Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curb) = 0.0150
 Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.50
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.16
 HALFSTREET FLOOD WIDTH(FEET) = 1.50
 AVERAGE FLOW VELOCITY(FT/SEC.) = 7.37
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.15
 STREET FLOW TRAVEL TIME(MIN.) = 0.70 Tc(MIN.) = 2.44
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
 SUBAREA AREA(ACRES) = 0.23 SUBAREA RUNOFF(CFS) = 1.87
 TOTAL AREA(ACRES) = 0.3 PEAK FLOW RATE(CFS) = 2.43

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.18 HALFSTREET FLOOD WIDTH(FEET) = 2.73
 FLOW VELOCITY(FT/SEC.) = 6.32 DEPTH*VELOCITY(FT*FT/SEC.) = 1.14
 LONGEST FLOWPATH FROM NODE 2853.00 TO NODE 2854.00 = 398.00 FEET.

FLOW PROCESS FROM NODE 2854.00 TO NODE 2854.00 IS CODE = 1

 >>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:	
TIME OF CONCENTRATION(MIN.) =	2.44
RAINFALL INTENSITY(INCH/HR) =	9.22
TOTAL STREAM AREA(ACRES) =	0.30
PEAK FLOW RATE(CFS) AT CONFLUENCE =	2.43

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	9.50	4.75	9.222	1.16
2	2.43	2.44	9.222	0.30

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	11.93	2.44	9.222
2	11.93	4.75	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 11.93 Tc(MIN.) = 4.75

TOTAL AREA(ACRES) = 1.5

LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2854.00 = 1938.00 FEET.

FLOW PROCESS FROM NODE 2854.00 TO NODE 2851.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1080.00 DOWNSTREAM(FEET) = 1019.00

FLOW LENGTH(FEET) = 328.00 MANNING'S N = 0.013

ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000

DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.5 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 20.81

ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 11.93

PIPE TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 5.01

LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2851.00 = 2266.00 FEET.

FLOW PROCESS FROM NODE 2851.00 TO NODE 2851.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 5.01

RAINFALL INTENSITY(INCH/HR) = 9.21

TOTAL STREAM AREA(ACRES) = 1.46

PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.93

FLOW PROCESS FROM NODE 2850.00 TO NODE 2849.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8800

S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 92.00
UPSTREAM ELEVATION(FEET) = 1086.00
DOWNSTREAM ELEVATION(FEET) = 1070.00
ELEVATION DIFFERENCE(FEET) = 16.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.763
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.57
TOTAL AREA(ACRES) = 0.07 TOTAL RUNOFF(CFS) = 0.57

FLOW PROCESS FROM NODE 2849.00 TO NODE 2851.00 IS CODE = 62

>>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1070.00 DOWNSTREAM ELEVATION(FEET) = 1025.00
STREET LENGTH(FEET) = 233.00 CURB HEIGHT(INCHES) = 6.0
STREET HALFWIDTH(FEET) = 18.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 8.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.020
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curb-to-curb) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 1.31
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.16
HALFSTREET FLOOD WIDTH(FEET) = 1.50
AVERAGE FLOW VELOCITY(FEET/SEC.) = 8.29
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.30
STREET FLOW TRAVEL TIME(MIN.) = 0.47 T_c(MIN.) = 2.23

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON T_c = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .8900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.887
SUBAREA AREA(ACRES) = 0.18 SUBAREA RUNOFF(CFS) = 1.48
TOTAL AREA(ACRES) = 0.2 PEAK FLOW RATE(CFS) = 2.05

END OF SUBAREA STREET FLOW HYDRAULICS:
DEPTH(FEET) = 0.16 HALFSTREET FLOOD WIDTH(FEET) = 1.50

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FLOW VELOCITY(FEET/SEC.) = 8.29 DEPTH*VELOCITY(FT*FT/SEC.) = 1.30
LONGEST FLOWPATH FROM NODE 2850.00 TO NODE 2851.00 = 325.00 FEET.

FLOW PROCESS FROM NODE 2851.00 TO NODE 2851.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 2.23
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 0.25
PEAK FLOW RATE(CFS) AT CONFLUENCE = 2.05

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	11.93	5.01	9.210	1.46
2	2.05	2.23	9.222	0.25

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	13.96	2.23	9.222
2	13.97	5.01	9.210

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 13.97 Tc(MIN.) = 5.01
TOTAL AREA(ACRES) = 1.7
LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2851.00 = 2266.00 FEET.

FLOW PROCESS FROM NODE 2851.00 TO NODE 2848.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1019.00 DOWNSTREAM(FEET) = 980.00
FLOW LENGTH(FEET) = 328.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.0 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 18.45
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1

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PIPE-FLOW(CFS) = 13.97
PIPE TRAVEL TIME(MIN.) = 0.30 Tc(MIN.) = 5.31
LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2848.00 = 2594.00 FEET.

FLOW PROCESS FROM NODE 2848.00 TO NODE 2828.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 980.00 DOWNSTREAM(FEET) = 979.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 15.00 CHANNEL SLOPE = 0.0667
CHANNEL FLOW THRU SUBAREA(CFS) = 13.97
FLOW VELOCITY(FEET/SEC) = 7.03 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 5.34
LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2828.00 = 2609.00 FEET.

FLOW PROCESS FROM NODE 2828.00 TO NODE 2828.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

=====

FLOW PROCESS FROM NODE 2847.00 TO NODE 2846.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1730.00

DOWNSTREAM ELEVATION(FEET) = 1695.00

ELEVATION DIFFERENCE(FEET) = 35.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

SUBAREA RUNOFF(CFS) = 0.92

TOTAL AREA(ACRES) = 0.33 TOTAL RUNOFF(CFS) = 0.92

FLOW PROCESS FROM NODE 2846.00 TO NODE 2845.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1695.00 DOWNSTREAM(FEET) = 1440.00

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CHANNEL LENGTH THRU SUBAREA(FEET) = 515.00 CHANNEL SLOPE = 0.4951
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2245 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.92
FLOW VELOCITY(FEET/SEC) = 2.65 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.23 Tc(MIN.) = 9.50
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2845.00 = 615.00 FEET.

FLOW PROCESS FROM NODE 2846.00 TO NODE 2845.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.095
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 3.06 SUBAREA RUNOFF(CFS) = 6.53
TOTAL AREA(ACRES) = 3.4 TOTAL RUNOFF(CFS) = 7.23
TC(MIN.) = 9.50

FLOW PROCESS FROM NODE 2845.00 TO NODE 2844.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1440.00 DOWNSTREAM(FEET) = 1325.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 395.00 CHANNEL SLOPE = 0.2911
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1928 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 7.23
FLOW VELOCITY(FEET/SEC) = 4.75 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.39 Tc(MIN.) = 10.89
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2844.00 = 1010.00 FEET.

FLOW PROCESS FROM NODE 2845.00 TO NODE 2844.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.583
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

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SUBAREA AREA(ACRES) = 9.88 SUBAREA RUNOFF(CFS) = 19.30
TOTAL AREA(ACRES) = 13.3 TOTAL RUNOFF(CFS) = 25.93
TC(MIN.) = 10.89

FLOW PROCESS FROM NODE 2844.00 TO NODE 2843.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1325.00 DOWNSTREAM(FEET) = 1305.00
FLOW LENGTH(FEET) = 80.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 9.2 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 28.48
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 25.93
PIPE TRAVEL TIME(MIN.) = 0.05 Tc(MIN.) = 10.93
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2843.00 = 1090.00 FEET.

FLOW PROCESS FROM NODE 2843.00 TO NODE 2843.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 10.93
RAINFALL INTENSITY(INCH/HR) = 5.57
TOTAL STREAM AREA(ACRES) = 13.27
PEAK FLOW RATE(CFS) AT CONFLUENCE = 25.93

FLOW PROCESS FROM NODE 2842.00 TO NODE 2841.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1395.00
DOWNSTREAM ELEVATION(FEET) = 1390.00
ELEVATION DIFFERENCE(FEET) = 5.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.895
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.868
SUBAREA RUNOFF(CFS) = 0.26
TOTAL AREA(ACRES) = 0.11 TOTAL RUNOFF(CFS) = 0.26

FLOW PROCESS FROM NODE 2841.00 TO NODE 2840.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1390.00	DOWNSTREAM(FEET) =	1345.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	253.00	CHANNEL SLOPE =	0.1779
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.1489	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION			
CHANNEL FLOW THRU SUBAREA(CFS) =	0.26		
FLOW VELOCITY(FEET/SEC) =	2.16	(PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)	
TRAVEL TIME(MIN.) =	1.95	Tc(MIN.) =	9.85
LONGEST FLOWPATH FROM NODE	2842.00	TO NODE	2840.00 =
			353.00 FEET.

FLOW PROCESS FROM NODE 2841.00 TO NODE 2840.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.956		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.3500		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.3500		
SUBAREA AREA(ACRES) =	1.72	SUBAREA RUNOFF(CFS) =	3.59
TOTAL AREA(ACRES) =	1.8	TOTAL RUNOFF(CFS) =	3.82
TC(MIN.) =	9.85		

FLOW PROCESS FROM NODE 2840.00 TO NODE 2839.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1339.00	DOWNSTREAM(FEET) =	1329.00
FLOW LENGTH(FEET) =	37.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000			
DEPTH OF FLOW IN 18.0 INCH PIPE IS 3.3 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.) =	17.14		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	3.82		
PIPE TRAVEL TIME(MIN.) =	0.04	Tc(MIN.) =	9.88
LONGEST FLOWPATH FROM NODE	2842.00	TO NODE	2839.00 =
			390.00 FEET.

FLOW PROCESS FROM NODE 2839.00 TO NODE 2843.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1335.00 DOWNSTREAM(FEET) = 1305.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 178.00 CHANNEL SLOPE = 0.1685
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1443 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 3.82
 FLOW VELOCITY(FEET/SEC) = 3.32 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.89 Tc(MIN.) = 10.78
 LONGEST FLOWPATH FROM NODE 2842.00 TO NODE 2843.00 = 568.00 FEET.

FLOW PROCESS FROM NODE 2843.00 TO NODE 2843.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.78
 RAINFALL INTENSITY(INCH/HR) = 5.62
 TOTAL STREAM AREA(ACRES) = 1.83
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.82

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	25.93	10.93	5.567	13.27
2	3.82	10.78	5.620	1.83

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	29.37	10.78	5.620
2	29.71	10.93	5.567

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 29.71 Tc(MIN.) = 10.93

TOTAL AREA(ACRES) = 15.1

LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2843.00 = 1090.00 FEET.

FLOW PROCESS FROM NODE 2843.00 TO NODE 2838.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1305.00 DOWNSTREAM(FEET) = 1165.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 773.00 CHANNEL SLOPE = 0.1811
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1506 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 29.71
 FLOW VELOCITY(FEET/SEC) = 6.72 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 1.92 Tc(MIN.) = 12.85
 LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2838.00 = 1863.00 FEET.

FLOW PROCESS FROM NODE 2843.00 TO NODE 2838.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.016
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 6.24 SUBAREA RUNOFF(CFS) = 10.96
 TOTAL AREA(ACRES) = 21.3 TOTAL RUNOFF(CFS) = 37.47
 TC(MIN.) = 12.85

FLOW PROCESS FROM NODE 2838.00 TO NODE 2838.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 12.85
 RAINFALL INTENSITY(INCH/HR) = 5.02
 TOTAL STREAM AREA(ACRES) = 21.34
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 37.47

FLOW PROCESS FROM NODE 2837.00 TO NODE 2836.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0

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INITIAL SUBAREA FLOW-LENGTH(FEET) = 95.00
UPSTREAM ELEVATION(FEET) = 1670.00
DOWNSTREAM ELEVATION(FEET) = 1640.00
ELEVATION DIFFERENCE(FEET) = 30.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.108
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.105
SUBAREA RUNOFF(CFS) = 0.40
TOTAL AREA(ACRES) = 0.14 TOTAL RUNOFF(CFS) = 0.40

FLOW PROCESS FROM NODE 2836.00 TO NODE 2835.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1640.00 DOWNSTREAM(FEET) = 1166.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1224.00 CHANNEL SLOPE = 0.3873
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2118 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.40
FLOW VELOCITY(FEET/SEC) = 2.58 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 7.92 T_c(MIN.) = 14.02
LONGEST FLOWPATH FROM NODE 2837.00 TO NODE 2835.00 = 1319.00 FEET.

FLOW PROCESS FROM NODE 2836.00 TO NODE 2835.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.741
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 14.49 SUBAREA RUNOFF(CFS) = 24.05
TOTAL AREA(ACRES) = 14.6 TOTAL RUNOFF(CFS) = 24.28
TC(MIN.) = 14.02

FLOW PROCESS FROM NODE 2835.00 TO NODE 2838.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1166.00 DOWNSTREAM(FEET) = 1160.00
FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

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DEPTH OF FLOW IN 18.0 INCH PIPE IS 11.1 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 21.16
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 24.28
PIPE TRAVEL TIME(MIN.) = 0.04 Tc(MIN.) = 14.06
LONGEST FLOWPATH FROM NODE 2837.00 TO NODE 2838.00 = 1369.00 FEET.

FLOW PROCESS FROM NODE 2838.00 TO NODE 2838.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 14.06
RAINFALL INTENSITY(INCH/HR) = 4.73
TOTAL STREAM AREA(ACRES) = 14.63
PEAK FLOW RATE(CFS) AT CONFLUENCE = 24.28

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	37.47	12.85	5.016	21.34
2	24.28	14.06	4.733	14.63

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	59.65	12.85	5.016
2	59.63	14.06	4.733

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:
PEAK FLOW RATE(CFS) = 59.65 Tc(MIN.) = 12.85
TOTAL AREA(ACRES) = 36.0
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2838.00 = 1863.00 FEET.

FLOW PROCESS FROM NODE 2838.00 TO NODE 2838.50 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1160.00 DOWNSTREAM(FEET) = 1115.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 340.00 CHANNEL SLOPE = 0.1324

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1232 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 59.65

FLOW VELOCITY(FEET/SEC) = 7.67 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.74 T_c (MIN.) = 13.59

LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2838.50 = 2203.00 FEET.

FLOW PROCESS FROM NODE 2838.50 TO NODE 2838.50 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 13.59

RAINFALL INTENSITY(INCH/HR) = 4.84

TOTAL STREAM AREA(ACRES) = 35.97

PEAK FLOW RATE(CFS) AT CONFLUENCE = 59.65

FLOW PROCESS FROM NODE 2834.00 TO NODE 2833.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1380.00

DOWNSTREAM ELEVATION(FEET) = 1355.00

ELEVATION DIFFERENCE(FEET) = 25.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.352

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T_c CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.902

SUBAREA RUNOFF(CFS) = 0.12

TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.12

FLOW PROCESS FROM NODE 2833.00 TO NODE 2838.50 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1355.00 DOWNSTREAM(FEET) = 1115.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 665.00 CHANNEL SLOPE = 0.3609

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .2072 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION

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CHANNEL FLOW THRU SUBAREA(CFS) = 0.12
FLOW VELOCITY(FEET/SEC) = 2.55 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.35 T_c(MIN.) = 10.70
LONGEST FLOWPATH FROM NODE 2834.00 TO NODE 2838.50 = 745.00 FEET.

FLOW PROCESS FROM NODE 2838.50 TO NODE 2838.50 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 10.70
RAINFALL INTENSITY(INCH/HR) = 5.65
TOTAL STREAM AREA(ACRES) = 0.06
PEAK FLOW RATE(CFS) AT CONFLUENCE = 0.12

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	59.65	13.59	4.839	35.97
2	0.12	10.70	5.645	0.06

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	51.25	10.70	5.645
2	59.75	13.59	4.839

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 59.75 T_c(MIN.) = 13.59
TOTAL AREA(ACRES) = 36.0
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2838.50 = 2203.00 FEET.

FLOW PROCESS FROM NODE 2838.50 TO NODE 2832.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1115.00 DOWNSTREAM(FEET) = 996.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 720.00 CHANNEL SLOPE = 0.1653
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1426 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

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CHANNEL FLOW THRU SUBAREA(CFS) = 59.75
FLOW VELOCITY(FEET/SEC) = 8.26 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.45 Tc(MIN.) = 15.04
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2832.00 = 2923.00 FEET.

FLOW PROCESS FROM NODE 2838.50 TO NODE 2832.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.532
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3310
SUBAREA AREA(ACRES) = 8.35 SUBAREA RUNOFF(CFS) = 9.46
TOTAL AREA(ACRES) = 44.4 TOTAL RUNOFF(CFS) = 66.58
TC(MIN.) = 15.04

FLOW PROCESS FROM NODE 2832.00 TO NODE 2832.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 15.04
RAINFALL INTENSITY(INCH/HR) = 4.53
TOTAL STREAM AREA(ACRES) = 44.38
PEAK FLOW RATE(CFS) AT CONFLUENCE = 66.58

FLOW PROCESS FROM NODE 2831.00 TO NODE 2830.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1250.00
DOWNSTREAM ELEVATION(FEET) = 1205.00
ELEVATION DIFFERENCE(FEET) = 45.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.33
TOTAL AREA(ACRES) = 0.18 TOTAL RUNOFF(CFS) = 0.33

FLOW PROCESS FROM NODE 2830.00 TO NODE 2829.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1205.00	DOWNSTREAM(FEET) =	1005.00
CHANNEL LENGTH THRU SUBAREA(FEET) =	425.00	CHANNEL SLOPE =	0.4706
SLOPE ADJUSTMENT CURVE USED:			
EFFECTIVE SLOPE =	.2221 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION			
CHANNEL FLOW THRU SUBAREA(CFS) =	0.33		
FLOW VELOCITY(FEET/SEC) =	2.64 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)		
TRAVEL TIME(MIN.) =	2.68	Tc(MIN.) =	9.79
LONGEST FLOWPATH FROM NODE	2831.00	TO NODE	2829.00 =
			525.00 FEET.

FLOW PROCESS FROM NODE 2830.00 TO NODE 2829.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	5.980		
*USER SPECIFIED(SUBAREA):			
USER-SPECIFIED RUNOFF COEFFICIENT =	.2500		
S.C.S. CURVE NUMBER (AMC II) =	0		
AREA-AVERAGE RUNOFF COEFFICIENT =	0.2500		
SUBAREA AREA(ACRES) =	7.31	SUBAREA RUNOFF(CFS) =	10.93
TOTAL AREA(ACRES) =	7.5	TOTAL RUNOFF(CFS) =	11.20
TC(MIN.) =	9.79		

FLOW PROCESS FROM NODE 2829.00 TO NODE 2832.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) =	1005.00	DOWNSTREAM(FEET) =	995.00
FLOW LENGTH(FEET) =	56.00	MANNING'S N =	0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000			
DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.3 INCHES			
PIPE-FLOW VELOCITY(FEET/SEC.) =	20.15		
ESTIMATED PIPE DIAMETER(INCH) =	18.00	NUMBER OF PIPES =	1
PIPE-FLOW(CFS) =	11.20		
PIPE TRAVEL TIME(MIN.) =	0.05	Tc(MIN.) =	9.83
LONGEST FLOWPATH FROM NODE	2831.00	TO NODE	2832.00 =
			581.00 FEET.

FLOW PROCESS FROM NODE 2832.00 TO NODE 2832.00 IS CODE = 1

 >>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<
 =====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 9.83
 RAINFALL INTENSITY(INCH/HR) = 5.96
 TOTAL STREAM AREA(ACRES) = 7.49
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 11.20

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	66.58	15.04	4.532	44.38
2	11.20	9.83	5.962	7.49

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	61.81	9.83	5.962
2	75.09	15.04	4.532

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 75.09 T_c(MIN.) = 15.04
 TOTAL AREA(ACRES) = 51.9
 LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2832.00 = 2923.00 FEET.

FLOW PROCESS FROM NODE 2832.00 TO NODE 2828.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
 =====

ELEVATION DATA: UPSTREAM(FEET) = 995.00 DOWNSTREAM(FEET) = 979.00
 FLOW LENGTH(FEET) = 73.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 24.0 INCH PIPE IS 15.5 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 35.08
 ESTIMATED PIPE DIAMETER(INCH) = 24.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 75.09
 PIPE TRAVEL TIME(MIN.) = 0.03 T_c(MIN.) = 15.08
 LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2828.00 = 2996.00 FEET.

FLOW PROCESS FROM NODE 2828.00 TO NODE 2828.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	75.09	15.08	4.525	51.87

LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2828.00 = 2996.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	13.97	5.34	8.837	1.71

LONGEST FLOWPATH FROM NODE 2860.00 TO NODE 2828.00 = 2609.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	40.58	5.34	8.837
2	82.25	15.08	4.525

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 82.25 Tc(MIN.) = 15.08

TOTAL AREA(ACRES) = 53.6

FLOW PROCESS FROM NODE 2828.00 TO NODE 2828.00 IS CODE = 12

>>>>>CLEAR MEMORY BANK # 1 <<<<<

FLOW PROCESS FROM NODE 2828.00 TO NODE 2827.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

ELEVATION DATA: UPSTREAM(FEET) = 979.00 DOWNSTREAM(FEET) = 946.00
 FLOW LENGTH(FEET) = 358.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 27.0 INCH PIPE IS 20.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 25.46
 ESTIMATED PIPE DIAMETER(INCH) = 27.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 82.25
 PIPE TRAVEL TIME(MIN.) = 0.23 Tc(MIN.) = 15.31
 LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2827.00 = 3354.00 FEET.

 FLOW PROCESS FROM NODE 2827.00 TO NODE 2827.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS =	2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:	
TIME OF CONCENTRATION(MIN.) =	15.31
RAINFALL INTENSITY(INCH/HR) =	4.48
TOTAL STREAM AREA(ACRES) =	53.58
PEAK FLOW RATE(CFS) AT CONFLUENCE =	82.25

 FLOW PROCESS FROM NODE 2826.00 TO NODE 2825.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT =	.8800
S.C.S. CURVE NUMBER (AMC II) =	0
INITIAL SUBAREA FLOW-LENGTH(FEET) =	95.00
UPSTREAM ELEVATION(FEET) =	1025.00
DOWNSTREAM ELEVATION(FEET) =	1012.00
ELEVATION DIFFERENCE(FEET) =	13.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) =	1.792
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN T _c CALCULATION!	
100 YEAR RAINFALL INTENSITY(INCH/HOUR) =	9.222
NOTE: RAINFALL INTENSITY IS BASED ON T _c = 5-MINUTE.	
SUBAREA RUNOFF(CFS) =	0.57
TOTAL AREA(ACRES) =	0.07
TOTAL RUNOFF(CFS) =	0.57

 FLOW PROCESS FROM NODE 2825.00 TO NODE 2824.00 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>(STREET TABLE SECTION # 1 USED)<<<<<

=====

UPSTREAM ELEVATION(FEET) =	1012.00	DOWNSTREAM ELEVATION(FEET) =	960.00
STREET LENGTH(FEET) =	394.00	CURB HEIGHT(INCHES) =	6.0
STREET HALFWIDTH(FEET) =	18.00		

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) =	8.00
INSIDE STREET CROSSFALL(DECIMAL) =	0.020
OUTSIDE STREET CROSSFALL(DECIMAL) =	0.020

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF =	2
STREET PARKWAY CROSSFALL(DECIMAL) =	0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) =	0.0150

Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0150

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.07
 STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
 STREET FLOW DEPTH(FEET) = 0.17
 HALFSTREET FLOOD WIDTH(FEET) = 2.33
 AVERAGE FLOW VELOCITY(FEET/SEC.) = 6.00
 PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.04
 STREET FLOW TRAVEL TIME(MIN.) = 1.09 Tc(MIN.) = 2.89
 100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
 NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .8800
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.880
 SUBAREA AREA(ACRES) = 0.37 SUBAREA RUNOFF(CFS) = 3.00
 TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 3.57

END OF SUBAREA STREET FLOW HYDRAULICS:
 DEPTH(FEET) = 0.21 HALFSTREET FLOOD WIDTH(FEET) = 4.26
 FLOW VELOCITY(FEET/SEC.) = 5.97 DEPTH*VELOCITY(FT*FT/SEC.) = 1.26
 LONGEST FLOWPATH FROM NODE 2826.00 TO NODE 2824.00 = 489.00 FEET.

FLOW PROCESS FROM NODE 2824.00 TO NODE 2823.00 IS CODE = 31

 >>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 954.00 DOWNSTREAM(FEET) = 947.00
 FLOW LENGTH(FEET) = 85.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.3 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 11.04
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.57
 PIPE TRAVEL TIME(MIN.) = 0.13 Tc(MIN.) = 3.01
 LONGEST FLOWPATH FROM NODE 2826.00 TO NODE 2823.00 = 574.00 FEET.

FLOW PROCESS FROM NODE 2823.00 TO NODE 2827.00 IS CODE = 53

 >>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 947.00 DOWNSTREAM(FEET) = 946.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 26.00 CHANNEL SLOPE = 0.0385
 SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .0385 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 CHANNEL FLOW THRU SUBAREA(CFS) = 3.57
 FLOW VELOCITY(FEET/SEC) = 1.68 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 0.26 Tc(MIN.) = 3.27
 LONGEST FLOWPATH FROM NODE 2826.00 TO NODE 2827.00 = 600.00 FEET.

FLOW PROCESS FROM NODE 2827.00 TO NODE 2827.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.27
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 0.44
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.57

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	82.25	15.31	4.480	53.58
2	3.57	3.27	9.222	0.44

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	21.15	3.27	9.222
2	83.98	15.31	4.480

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 83.98 Tc(MIN.) = 15.31
 TOTAL AREA(ACRES) = 54.0
 LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2827.00 = 3354.00 FEET.

FLOW PROCESS FROM NODE 2827.00 TO NODE 2822.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 946.00 DOWNSTREAM(FEET) = 945.00
 FLOW LENGTH(FEET) = 15.00 MANNING'S N = 0.013
 DEPTH OF FLOW IN 30.0 INCH PIPE IS 21.0 INCHES

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PIPE-FLOW VELOCITY(FEET/SEC.) = 22.91
ESTIMATED PIPE DIAMETER(INCH) = 30.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 83.98
PIPE TRAVEL TIME(MIN.) = 0.01 Tc(MIN.) = 15.32
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 2822.00 = 3369.00 FEET.

FLOW PROCESS FROM NODE 2822.00 TO NODE 28.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 945.00 DOWNSTREAM(FEET) = 925.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 112.00 CHANNEL SLOPE = 0.1786
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1493 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 83.98
FLOW VELOCITY(FEET/SEC) = 9.46 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.20 Tc(MIN.) = 15.52
LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 28.00 = 3481.00 FEET.

FLOW PROCESS FROM NODE 28.00 TO NODE 28.00 IS CODE = 10

>>>>MAIN-STREAM MEMORY COPIED ONTO MEMORY BANK # 1 <<<<

FLOW PROCESS FROM NODE 2821.00 TO NODE 2820.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1736.00
DOWNSTREAM ELEVATION(FEET) = 1707.00
ELEVATION DIFFERENCE(FEET) = 29.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972
SUBAREA RUNOFF(CFS) = 0.78
TOTAL AREA(ACRES) = 0.28 TOTAL RUNOFF(CFS) = 0.78

FLOW PROCESS FROM NODE 2820.00 TO NODE 2819.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1707.00 DOWNSTREAM(FEET) = 1500.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 460.00 CHANNEL SLOPE = 0.4500
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2200 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.78
FLOW VELOCITY(FEET/SEC) = 2.63 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.92 Tc(MIN.) = 9.19
LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2819.00 = 560.00 FEET.

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FLOW PROCESS FROM NODE 2820.00 TO NODE 2819.00 IS CODE = 81
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>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

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=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.229
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 3.50 SUBAREA RUNOFF(CFS) = 7.63
TOTAL AREA(ACRES) = 3.8 TOTAL RUNOFF(CFS) = 8.24
TC(MIN.) = 9.19

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FLOW PROCESS FROM NODE 2819.00 TO NODE 2818.00 IS CODE = 53
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>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

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=====
ELEVATION DATA: UPSTREAM(FEET) = 1500.00 DOWNSTREAM(FEET) = 1200.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1130.00 CHANNEL SLOPE = 0.2655
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1852 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 8.24
FLOW VELOCITY(FEET/SEC) = 4.86 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 3.87 Tc(MIN.) = 13.06
LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2818.00 = 1690.00 FEET.

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FLOW PROCESS FROM NODE 2819.00 TO NODE 2818.00 IS CODE = 81
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>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

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=====
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.965

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*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 16.92 SUBAREA RUNOFF(CFS) = 29.40

TOTAL AREA(ACRES) = 20.7 TOTAL RUNOFF(CFS) = 35.97

TC(MIN.) = 13.06

FLOW PROCESS FROM NODE 2818.00 TO NODE 2817.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1200.00 DOWNSTREAM(Feet) = 1070.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 890.00 CHANNEL SLOPE = 0.1461

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1324 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 35.97

FLOW VELOCITY(Feet/Sec) = 6.72 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 2.21 Tc(MIN.) = 15.27

LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2817.00 = 2580.00 FEET.

FLOW PROCESS FROM NODE 2818.00 TO NODE 2817.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.489

*USER SPECIFIED(SUBAREA):

USER-SPECIFIED RUNOFF COEFFICIENT = .2500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3147

SUBAREA AREA(ACRES) = 11.28 SUBAREA RUNOFF(CFS) = 12.66

TOTAL AREA(ACRES) = 32.0 TOTAL RUNOFF(CFS) = 45.18

TC(MIN.) = 15.27

FLOW PROCESS FROM NODE 2817.00 TO NODE 2816.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(Feet) = 1070.00 DOWNSTREAM(Feet) = 980.00

CHANNEL LENGTH THRU SUBAREA(Feet) = 655.00 CHANNEL SLOPE = 0.1374

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1266 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 45.18

P-28

FLOW VELOCITY(FEET/SEC) = 7.09 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.54 Tc(MIN.) = 16.81
LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2816.00 = 3235.00 FEET.

FLOW PROCESS FROM NODE 2817.00 TO NODE 2816.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.219
*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2900
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3110
SUBAREA AREA(ACRES) = 5.72 SUBAREA RUNOFF(CFS) = 7.00
TOTAL AREA(ACRES) = 37.7 TOTAL RUNOFF(CFS) = 49.46
TC(MIN.) = 16.81

FLOW PROCESS FROM NODE 2816.00 TO NODE 2816.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 16.81
RAINFALL INTENSITY(INCH/HR) = 4.22
TOTAL STREAM AREA(ACRES) = 37.70
PEAK FLOW RATE(CFS) AT CONFLUENCE = 49.46

FLOW PROCESS FROM NODE 2815.00 TO NODE 2814.00 IS CODE = 21

>>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
USER-SPECIFIED RUNOFF COEFFICIENT = .2500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00
UPSTREAM ELEVATION(FEET) = 1260.00
DOWNSTREAM ELEVATION(FEET) = 1235.00
ELEVATION DIFFERENCE(FEET) = 25.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 7.102
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.353
SUBAREA RUNOFF(CFS) = 0.55
TOTAL AREA(ACRES) = 0.30 TOTAL RUNOFF(CFS) = 0.55

FLOW PROCESS FROM NODE 2814.00 TO NODE 2816.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1235.00 DOWNSTREAM(FEET) = 980.00
 CHANNEL LENGTH THRU SUBAREA(FEET) = 1510.00 CHANNEL SLOPE = 0.1689
 SLOPE ADJUSTMENT CURVE USED:
 EFFECTIVE SLOPE = .1444 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
 CHANNEL FLOW THRU SUBAREA(CFS) = 0.55
 FLOW VELOCITY(FEET/SEC) = 2.13 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
 TRAVEL TIME(MIN.) = 11.82 Tc(MIN.) = 18.93
 LONGEST FLOWPATH FROM NODE 2815.00 TO NODE 2816.00 = 1610.00 FEET.

FLOW PROCESS FROM NODE 2814.00 TO NODE 2816.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.908
 *USER SPECIFIED(SUBAREA):
 USER-SPECIFIED RUNOFF COEFFICIENT = .2900
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.2893
 SUBAREA AREA(ACRES) = 15.71 SUBAREA RUNOFF(CFS) = 17.80
 TOTAL AREA(ACRES) = 16.0 TOTAL RUNOFF(CFS) = 18.10
 TC(MIN.) = 18.93

FLOW PROCESS FROM NODE 2816.00 TO NODE 2816.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 18.93
 RAINFALL INTENSITY(INCH/HR) = 3.91
 TOTAL STREAM AREA(ACRES) = 16.01
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 18.10

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	49.46	16.81	4.219	37.70
2	18.10	18.93	3.908	16.01

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	T _c (MIN.)	INTENSITY (INCH/HOUR)
1	65.53	16.81	4.219
2	63.91	18.93	3.908

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 65.53 T_c(MIN.) = 16.81

TOTAL AREA(ACRES) = 53.7

LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2816.00 = 3235.00 FEET.

FLOW PROCESS FROM NODE 2816.00 TO NODE 2813.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 980.00 DOWNSTREAM(FEET) = 956.00

FLOW LENGTH(FEET) = 75.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 13.8 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 39.00

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 65.53

PIPE TRAVEL TIME(MIN.) = 0.03 T_c(MIN.) = 16.84

LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 2813.00 = 3310.00 FEET.

FLOW PROCESS FROM NODE 2813.00 TO NODE 28.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 965.00 DOWNSTREAM(FEET) = 925.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 375.00 CHANNEL SLOPE = 0.1067

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1050 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 65.53

FLOW VELOCITY(FEET/SEC) = 7.31 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.86 T_c(MIN.) = 17.69

LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 28.00 = 3685.00 FEET.

FLOW PROCESS FROM NODE 28.00 TO NODE 28.00 IS CODE = 11

>>>>>CONFLUENCE MEMORY BANK # 1 WITH THE MAIN-STREAM MEMORY<<<<<

** MAIN STREAM CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	65.53	17.69	4.081	53.71

LONGEST FLOWPATH FROM NODE 2821.00 TO NODE 28.00 = 3685.00 FEET.

** MEMORY BANK # 1 CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	83.98	15.52	4.441	54.02

LONGEST FLOWPATH FROM NODE 2847.00 TO NODE 28.00 = 3481.00 FEET.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	141.47	15.52	4.441
2	142.71	17.69	4.081

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 142.71 Tc(MIN.) = 17.69
 TOTAL AREA(ACRES) = 107.7

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 107.7 TC(MIN.) = 17.69
 PEAK FLOW RATE(CFS) = 142.71

END OF RATIONAL METHOD ANALYSIS



Basin 28

Node to Node		Code	C Factor	Area (ac.)	C x A
2860	2859	2	0.9	0.05	0.05
2859	2858	6	0.89	0.81	0.72
2856	2855	2	0.88	0.07	0.06
2855	2857	6	0.88	0.23	0.20
2853	2852	2	0.88	0.07	0.06
2852	2854	6	0.88	0.23	0.20
2850	2849	2	0.88	0.07	0.06
2849	2851	6	0.89	0.18	0.16
			Total	1.71	1.52
			Avg C =	0.89	

BASIN 28

RATIONAL METHOD HYDROGRAPH PROGRAM
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RUN DATE 1/25/2017
HYDROGRAPH FILE NAME Text1
TIME OF CONCENTRATION 5 MIN.
6 HOUR RAINFALL 3.5 INCHES
BASIN AREA 1.7 ACRES
RUNOFF COEFFICIENT 0.89
PEAK DISCHARGE 13.97 CFS

TIME (MIN) = 0	DISCHARGE (CFS) = 0
TIME (MIN) = 5	DISCHARGE (CFS) = 0.3
TIME (MIN) = 10	DISCHARGE (CFS) = 0.3
TIME (MIN) = 15	DISCHARGE (CFS) = 0.3
TIME (MIN) = 20	DISCHARGE (CFS) = 0.3
TIME (MIN) = 25	DISCHARGE (CFS) = 0.3
TIME (MIN) = 30	DISCHARGE (CFS) = 0.3
TIME (MIN) = 35	DISCHARGE (CFS) = 0.3
TIME (MIN) = 40	DISCHARGE (CFS) = 0.3
TIME (MIN) = 45	DISCHARGE (CFS) = 0.4
TIME (MIN) = 50	DISCHARGE (CFS) = 0.4
TIME (MIN) = 55	DISCHARGE (CFS) = 0.4
TIME (MIN) = 60	DISCHARGE (CFS) = 0.4
TIME (MIN) = 65	DISCHARGE (CFS) = 0.4
TIME (MIN) = 70	DISCHARGE (CFS) = 0.4
TIME (MIN) = 75	DISCHARGE (CFS) = 0.4
TIME (MIN) = 80	DISCHARGE (CFS) = 0.4
TIME (MIN) = 85	DISCHARGE (CFS) = 0.4
TIME (MIN) = 90	DISCHARGE (CFS) = 0.4
TIME (MIN) = 95	DISCHARGE (CFS) = 0.4
TIME (MIN) = 100	DISCHARGE (CFS) = 0.4
TIME (MIN) = 105	DISCHARGE (CFS) = 0.4
TIME (MIN) = 110	DISCHARGE (CFS) = 0.5
TIME (MIN) = 115	DISCHARGE (CFS) = 0.5
TIME (MIN) = 120	DISCHARGE (CFS) = 0.5
TIME (MIN) = 125	DISCHARGE (CFS) = 0.5
TIME (MIN) = 130	DISCHARGE (CFS) = 0.5
TIME (MIN) = 135	DISCHARGE (CFS) = 0.5
TIME (MIN) = 140	DISCHARGE (CFS) = 0.5
TIME (MIN) = 145	DISCHARGE (CFS) = 0.6
TIME (MIN) = 150	DISCHARGE (CFS) = 0.6
TIME (MIN) = 155	DISCHARGE (CFS) = 0.6
TIME (MIN) = 160	DISCHARGE (CFS) = 0.6
TIME (MIN) = 165	DISCHARGE (CFS) = 0.6
TIME (MIN) = 170	DISCHARGE (CFS) = 0.7
TIME (MIN) = 175	DISCHARGE (CFS) = 0.7

TIME (MIN) = 180 DISCHARGE (CFS) = 0.7
TIME (MIN) = 185 DISCHARGE (CFS) = 0.8
TIME (MIN) = 190 DISCHARGE (CFS) = 0.8
TIME (MIN) = 195 DISCHARGE (CFS) = 0.9
TIME (MIN) = 200 DISCHARGE (CFS) = 0.9
TIME (MIN) = 205 DISCHARGE (CFS) = 1
TIME (MIN) = 210 DISCHARGE (CFS) = 1.1
TIME (MIN) = 215 DISCHARGE (CFS) = 1.2
TIME (MIN) = 220 DISCHARGE (CFS) = 1.4
TIME (MIN) = 225 DISCHARGE (CFS) = 1.7
TIME (MIN) = 230 DISCHARGE (CFS) = 1.9
TIME (MIN) = 235 DISCHARGE (CFS) = 2.8
TIME (MIN) = 240 DISCHARGE (CFS) = 3.9
TIME (MIN) = 245 DISCHARGE (CFS) = 13.97
TIME (MIN) = 250 DISCHARGE (CFS) = 2.2
TIME (MIN) = 255 DISCHARGE (CFS) = 1.5
TIME (MIN) = 260 DISCHARGE (CFS) = 1.2
TIME (MIN) = 265 DISCHARGE (CFS) = 1
TIME (MIN) = 270 DISCHARGE (CFS) = 0.8
TIME (MIN) = 275 DISCHARGE (CFS) = 0.8
TIME (MIN) = 280 DISCHARGE (CFS) = 0.7
TIME (MIN) = 285 DISCHARGE (CFS) = 0.6
TIME (MIN) = 290 DISCHARGE (CFS) = 0.6
TIME (MIN) = 295 DISCHARGE (CFS) = 0.5
TIME (MIN) = 300 DISCHARGE (CFS) = 0.5
TIME (MIN) = 305 DISCHARGE (CFS) = 0.5
TIME (MIN) = 310 DISCHARGE (CFS) = 0.5
TIME (MIN) = 315 DISCHARGE (CFS) = 0.4
TIME (MIN) = 320 DISCHARGE (CFS) = 0.4
TIME (MIN) = 325 DISCHARGE (CFS) = 0.4
TIME (MIN) = 330 DISCHARGE (CFS) = 0.4
TIME (MIN) = 335 DISCHARGE (CFS) = 0.4
TIME (MIN) = 340 DISCHARGE (CFS) = 0.4
TIME (MIN) = 345 DISCHARGE (CFS) = 0.4
TIME (MIN) = 350 DISCHARGE (CFS) = 0.3
TIME (MIN) = 355 DISCHARGE (CFS) = 0.3
TIME (MIN) = 360 DISCHARGE (CFS) = 0.3
TIME (MIN) = 365 DISCHARGE (CFS) = 0

Detention 28 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree view of the project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree view, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing the configuration for the selected 'Basin Inflow' element. The configuration panel includes fields for 'Basin Name', 'Element Name', 'Description', 'Downstream', 'Area (MI2)', and 'Flow Method'.

Detention 28

- Basin Models
 - Basin 28
 - Basin Inflow**
 - Discharge Gage
 - Detention Basin 28
 - Outlets
 - Outlet 1
- Meteorologic Models
 - Sierra
- Control Specifications
 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 2828 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
- Paired Data
 - Elevation-Storage Functions
 - Basin 28 Stage-Storage

Components Compute Results

Source Inflow Options

Basin Name: Basin 28
Element Name: Basin Inflow

Description: Node 2828

Downstream: Detention Basin 28

Area (MI2) 0.003

Flow Method: Discharge Gage

Detention 28

Basin Models

Basin 28

Basin Inflow

Discharge Gage

Detention Basin 28

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2828 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 28 Stage-Storage

Components

Compute

Results

Reservoir

Outlet 1

Options

Basin Name: Basin 28

Element Name: Detention Basin 28

Method: Orifice Outlet

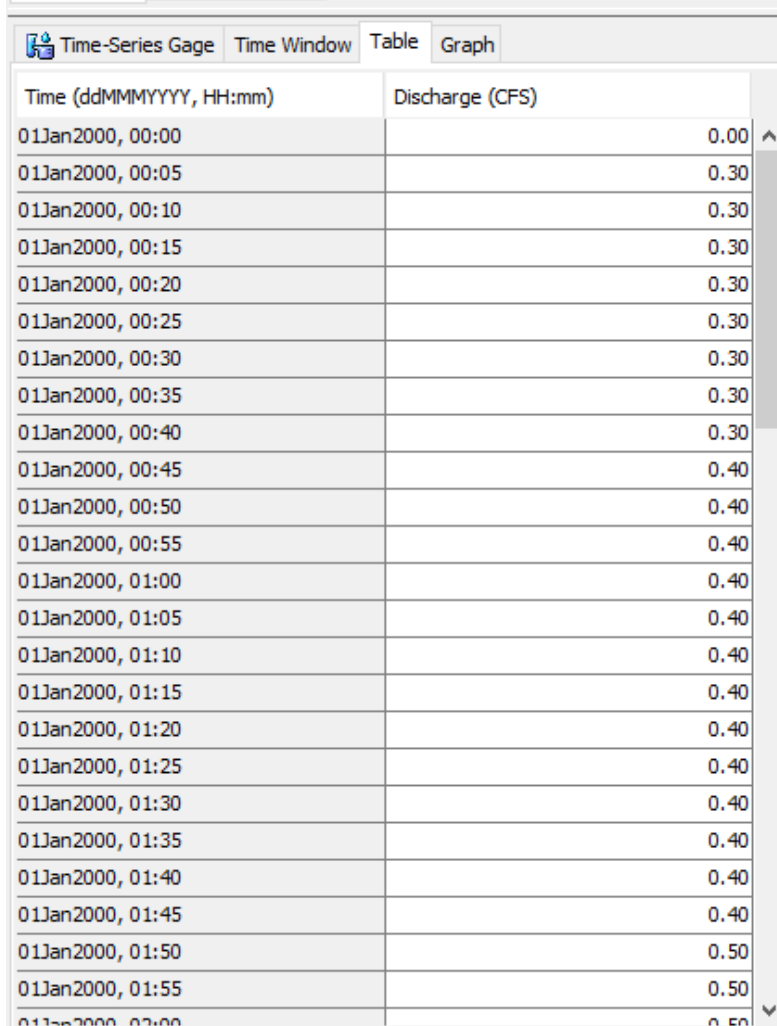
Direction: Main

Number Barrels: 1

*Center Elevation (FT) 0.25

*Area (FT2) 0.196

*Coefficient: 0.60



Detention 28

- Basin Models
 - Basin 28
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 - Sierra
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 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 2828 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
- Paired Data
 - Elevation-Storage Functions
 - Basin 28 Stage-Storage

Components Compute Results

Paired Data Table Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
2.0	0.237
4.0	0.521

Project: Detention 28 Simulation Run: Run 1
Reservoir: Detention Basin 28

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 28
End of Run:	01Jan2000, 06:05	Meteorologic Model:	Sierra
Compute Time:	25Jan2017, 13:04:24	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	14.0 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	1.2 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:19
Inflow Volume:	0.4 (AC-FT)	Peak Storage:	0.2 (AC-FT)
Discharge Volume:	0.3 (AC-FT)	Peak Elevation:	2.0 (FT)

Observed Hydrograph at Gage Node 2828 Inflow

Peak Discharge:	14.0 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:05
Mean Abs Error:	0.6 (CFS)	RMS Error:	1.5 (CFS)
Volume:	0.4 (AC-FT)	Volume Residual:	-0.1 (AC-FT)
Nash-Sutcliffe:	0.026		

Project: Detention 28 Simulation Run: Run 1
Reservoir: Detention Basin 28

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 28
End of Run: 01Jan2000, 06:05 Meteorologic Model: Sierra
Compute Time: 25Jan2017, 13:04:24 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:02	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:03	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:04	0.2	0.0	0.0	0.0	0.2
01Jan2000	00:05	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:06	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:07	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:08	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:09	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:10	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:11	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:12	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:13	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:14	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:15	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:16	0.3	0.0	0.0	0.0	0.3
01Jan2000	00:17	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:18	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:19	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:20	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:21	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:22	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:23	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:24	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:25	0.3	0.0	0.1	0.0	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:27	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:28	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:29	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:30	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:31	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:32	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:33	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:34	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:35	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:36	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:37	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:38	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:39	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:40	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:41	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:42	0.3	0.0	0.1	0.0	0.3
01Jan2000	00:43	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:44	0.4	0.0	0.1	0.0	0.4
01Jan2000	00:45	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:46	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:47	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:48	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:49	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:50	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:51	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:52	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:53	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:54	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:55	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:56	0.4	0.0	0.2	0.0	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:58	0.4	0.0	0.2	0.0	0.4
01Jan2000	00:59	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:00	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:01	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:02	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:03	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:04	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:05	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:06	0.4	0.0	0.2	0.0	0.4
01Jan2000	01:07	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:08	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:09	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:10	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:11	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:12	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:13	0.4	0.0	0.3	0.1	0.4
01Jan2000	01:14	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:15	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:16	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:17	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:18	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:19	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:20	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:21	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:22	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:23	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:24	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:25	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:26	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:27	0.4	0.0	0.3	0.2	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:29	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:30	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:31	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:32	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:33	0.4	0.0	0.3	0.2	0.4
01Jan2000	01:34	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:35	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:36	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:37	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:38	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:39	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:40	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:41	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:42	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:43	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:44	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:45	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:46	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:47	0.4	0.0	0.3	0.3	0.4
01Jan2000	01:48	0.5	0.0	0.3	0.3	0.5
01Jan2000	01:49	0.5	0.0	0.3	0.3	0.5
01Jan2000	01:50	0.5	0.0	0.3	0.3	0.5
01Jan2000	01:51	0.5	0.0	0.3	0.3	0.5
01Jan2000	01:52	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:53	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:54	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:55	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:56	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:57	0.5	0.0	0.4	0.3	0.5
01Jan2000	01:58	0.5	0.0	0.4	0.3	0.5

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:00	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:01	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:02	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:03	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:04	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:05	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:06	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:07	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:08	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:09	0.5	0.0	0.4	0.3	0.5
01Jan2000	02:10	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:11	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:12	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:13	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:14	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:15	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:16	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:17	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:18	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:19	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:20	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:21	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:22	0.5	0.0	0.4	0.4	0.5
01Jan2000	02:23	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:24	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:25	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:26	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:27	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:28	0.6	0.0	0.4	0.4	0.6
01Jan2000	02:29	0.6	0.1	0.4	0.4	0.6

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:31	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:32	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:33	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:34	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:35	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:36	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:37	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:38	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:39	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:40	0.6	0.1	0.4	0.4	0.6
01Jan2000	02:41	0.6	0.1	0.5	0.4	0.6
01Jan2000	02:42	0.6	0.1	0.5	0.4	0.6
01Jan2000	02:43	0.5	0.1	0.5	0.4	0.5
01Jan2000	02:44	0.5	0.1	0.5	0.4	0.5
01Jan2000	02:45	0.5	0.1	0.5	0.4	0.5
01Jan2000	02:46	0.5	0.1	0.5	0.4	0.5
01Jan2000	02:47	0.6	0.1	0.5	0.4	0.6
01Jan2000	02:48	0.6	0.1	0.5	0.4	0.6
01Jan2000	02:49	0.7	0.1	0.5	0.4	0.7
01Jan2000	02:50	0.7	0.1	0.5	0.4	0.7
01Jan2000	02:51	0.7	0.1	0.5	0.4	0.7
01Jan2000	02:52	0.7	0.1	0.5	0.4	0.7
01Jan2000	02:53	0.7	0.1	0.5	0.4	0.7
01Jan2000	02:54	0.7	0.1	0.5	0.5	0.7
01Jan2000	02:55	0.7	0.1	0.5	0.5	0.7
01Jan2000	02:56	0.7	0.1	0.5	0.5	0.7
01Jan2000	02:57	0.7	0.1	0.5	0.5	0.7
01Jan2000	02:58	0.7	0.1	0.5	0.5	0.7
01Jan2000	02:59	0.7	0.1	0.5	0.5	0.7
01Jan2000	03:00	0.7	0.1	0.5	0.5	0.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	0.7	0.1	0.5	0.5	0.7
01Jan2000	03:02	0.7	0.1	0.5	0.5	0.7
01Jan2000	03:03	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:04	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:05	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:06	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:07	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:08	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:09	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:10	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:11	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:12	0.8	0.1	0.5	0.5	0.8
01Jan2000	03:13	0.9	0.1	0.5	0.5	0.9
01Jan2000	03:14	0.9	0.1	0.5	0.5	0.9
01Jan2000	03:15	0.9	0.1	0.5	0.5	0.9
01Jan2000	03:16	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:17	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:18	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:19	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:20	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:21	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:22	0.9	0.1	0.6	0.5	0.9
01Jan2000	03:23	1.0	0.1	0.6	0.5	1.0
01Jan2000	03:24	1.0	0.1	0.6	0.5	1.0
01Jan2000	03:25	1.0	0.1	0.6	0.6	1.0
01Jan2000	03:26	1.0	0.1	0.6	0.6	1.0
01Jan2000	03:27	1.0	0.1	0.6	0.6	1.0
01Jan2000	03:28	1.1	0.1	0.6	0.6	1.1
01Jan2000	03:29	1.1	0.1	0.6	0.6	1.1
01Jan2000	03:30	1.1	0.1	0.6	0.6	1.1
01Jan2000	03:31	1.1	0.1	0.6	0.6	1.1

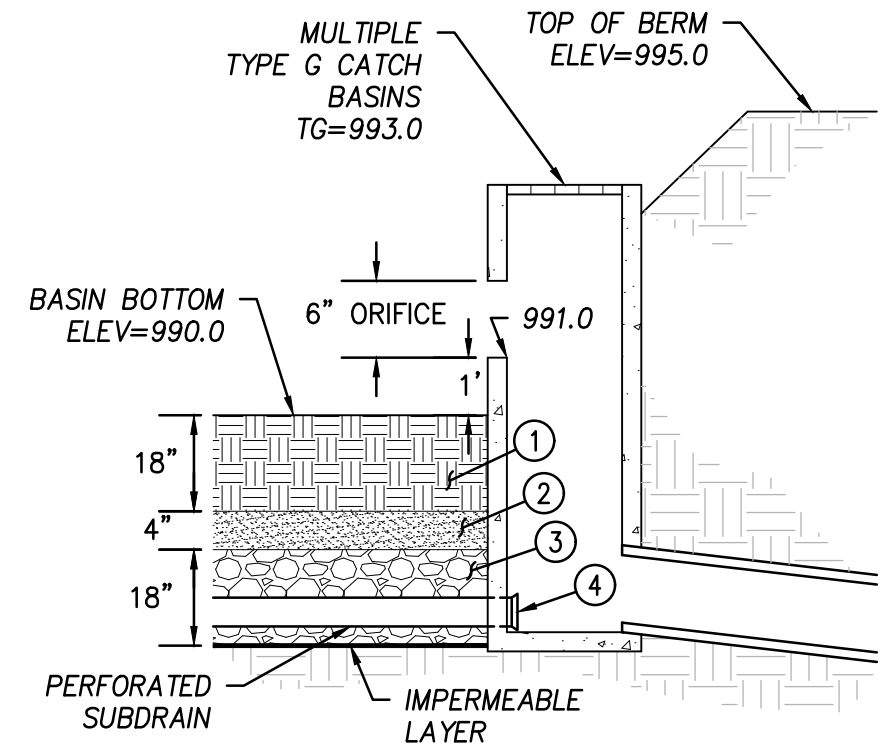
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	1.1	0.1	0.6	0.6	1.1
01Jan2000	03:33	1.2	0.1	0.6	0.6	1.2
01Jan2000	03:34	1.2	0.1	0.6	0.6	1.2
01Jan2000	03:35	1.2	0.1	0.7	0.6	1.2
01Jan2000	03:36	1.2	0.1	0.7	0.6	1.2
01Jan2000	03:37	1.3	0.1	0.7	0.6	1.3
01Jan2000	03:38	1.3	0.1	0.7	0.6	1.3
01Jan2000	03:39	1.4	0.1	0.7	0.6	1.4
01Jan2000	03:40	1.4	0.1	0.7	0.6	1.4
01Jan2000	03:41	1.5	0.1	0.7	0.6	1.5
01Jan2000	03:42	1.5	0.1	0.7	0.6	1.5
01Jan2000	03:43	1.6	0.1	0.7	0.6	1.6
01Jan2000	03:44	1.6	0.1	0.7	0.7	1.6
01Jan2000	03:45	1.7	0.1	0.7	0.7	1.7
01Jan2000	03:46	1.7	0.1	0.8	0.7	1.7
01Jan2000	03:47	1.8	0.1	0.8	0.7	1.8
01Jan2000	03:48	1.8	0.1	0.8	0.7	1.8
01Jan2000	03:49	1.9	0.1	0.8	0.7	1.9
01Jan2000	03:50	1.9	0.1	0.8	0.7	1.9
01Jan2000	03:51	2.1	0.1	0.8	0.7	2.1
01Jan2000	03:52	2.3	0.1	0.8	0.7	2.3
01Jan2000	03:53	2.4	0.1	0.9	0.7	2.4
01Jan2000	03:54	2.6	0.1	0.9	0.8	2.6
01Jan2000	03:55	2.8	0.1	0.9	0.8	2.8
01Jan2000	03:56	3.0	0.1	0.9	0.8	3.0
01Jan2000	03:57	3.2	0.1	1.0	0.8	3.2
01Jan2000	03:58	3.5	0.1	1.0	0.8	3.5
01Jan2000	03:59	3.7	0.1	1.0	0.8	3.7
01Jan2000	04:00	3.9	0.1	1.1	0.8	3.9
01Jan2000	04:01	5.9	0.1	1.1	0.9	5.9
01Jan2000	04:02	7.9	0.1	1.2	0.9	7.9

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	9.9	0.1	1.3	1.0	9.9
01Jan2000	04:04	12.0	0.2	1.4	1.0	12.0
01Jan2000	04:05	14.0	0.2	1.5	1.1	14.0
01Jan2000	04:06	11.6	0.2	1.7	1.1	11.6
01Jan2000	04:07	9.3	0.2	1.8	1.2	9.3
01Jan2000	04:08	6.9	0.2	1.8	1.2	6.9
01Jan2000	04:09	4.6	0.2	1.9	1.2	4.6
01Jan2000	04:10	2.2	0.2	1.9	1.2	2.2
01Jan2000	04:11	2.1	0.2	1.9	1.2	2.1
01Jan2000	04:12	1.9	0.2	1.9	1.2	1.9
01Jan2000	04:13	1.8	0.2	1.9	1.2	1.8
01Jan2000	04:14	1.6	0.2	2.0	1.2	1.6
01Jan2000	04:15	1.5	0.2	2.0	1.2	1.5
01Jan2000	04:16	1.4	0.2	2.0	1.2	1.4
01Jan2000	04:17	1.4	0.2	2.0	1.2	1.4
01Jan2000	04:18	1.3	0.2	2.0	1.2	1.3
01Jan2000	04:19	1.3	0.2	2.0	1.2	1.3
01Jan2000	04:20	1.2	0.2	2.0	1.2	1.2
01Jan2000	04:21	1.2	0.2	2.0	1.2	1.2
01Jan2000	04:22	1.1	0.2	2.0	1.2	1.1
01Jan2000	04:23	1.1	0.2	2.0	1.2	1.1
01Jan2000	04:24	1.0	0.2	2.0	1.2	1.0
01Jan2000	04:25	1.0	0.2	2.0	1.2	1.0
01Jan2000	04:26	1.0	0.2	2.0	1.2	1.0
01Jan2000	04:27	0.9	0.2	1.9	1.2	0.9
01Jan2000	04:28	0.9	0.2	1.9	1.2	0.9
01Jan2000	04:29	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:30	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:31	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:32	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:33	0.8	0.2	1.9	1.2	0.8

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:35	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:36	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:37	0.8	0.2	1.9	1.2	0.8
01Jan2000	04:38	0.7	0.2	1.9	1.2	0.7
01Jan2000	04:39	0.7	0.2	1.9	1.2	0.7
01Jan2000	04:40	0.7	0.2	1.9	1.2	0.7
01Jan2000	04:41	0.7	0.2	1.9	1.2	0.7
01Jan2000	04:42	0.7	0.2	1.9	1.2	0.7
01Jan2000	04:43	0.6	0.2	1.9	1.2	0.6
01Jan2000	04:44	0.6	0.2	1.9	1.2	0.6
01Jan2000	04:45	0.6	0.2	1.9	1.2	0.6
01Jan2000	04:46	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:47	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:48	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:49	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:50	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:51	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:52	0.6	0.2	1.8	1.2	0.6
01Jan2000	04:53	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:54	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:55	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:56	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:57	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:58	0.5	0.2	1.8	1.2	0.5
01Jan2000	04:59	0.5	0.2	1.8	1.2	0.5
01Jan2000	05:00	0.5	0.2	1.7	1.2	0.5
01Jan2000	05:01	0.5	0.2	1.7	1.2	0.5
01Jan2000	05:02	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:03	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:04	0.5	0.2	1.7	1.1	0.5

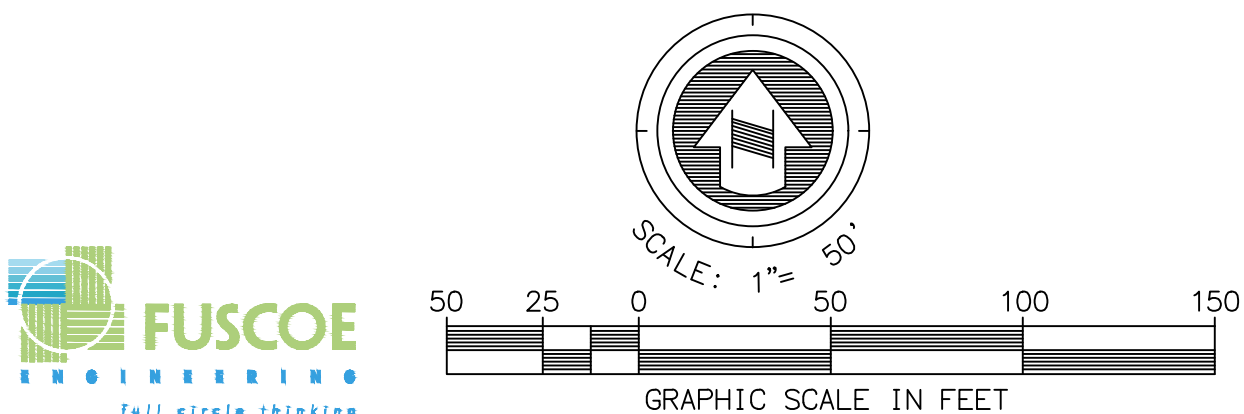
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:06	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:07	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:08	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:09	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:10	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:11	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:12	0.5	0.2	1.7	1.1	0.5
01Jan2000	05:13	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:14	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:15	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:16	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:17	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:18	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:19	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:20	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:21	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:22	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:23	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:24	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:25	0.4	0.2	1.6	1.1	0.4
01Jan2000	05:26	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:27	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:28	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:29	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:30	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:31	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:32	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:33	0.4	0.2	1.5	1.1	0.4
01Jan2000	05:34	0.4	0.2	1.5	1.0	0.4
01Jan2000	05:35	0.4	0.2	1.5	1.0	0.4

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	0.4	0.2	1.5	1.0	0.4
01Jan2000	05:37	0.4	0.2	1.5	1.0	0.4
01Jan2000	05:38	0.4	0.2	1.5	1.0	0.4
01Jan2000	05:39	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:40	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:41	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:42	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:43	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:44	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:45	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:46	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:47	0.4	0.2	1.4	1.0	0.4
01Jan2000	05:48	0.3	0.2	1.4	1.0	0.3
01Jan2000	05:49	0.3	0.2	1.4	1.0	0.3
01Jan2000	05:50	0.3	0.2	1.4	1.0	0.3
01Jan2000	05:51	0.3	0.2	1.4	1.0	0.3
01Jan2000	05:52	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:53	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:54	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:55	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:56	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:57	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:58	0.3	0.2	1.3	1.0	0.3
01Jan2000	05:59	0.3	0.2	1.3	1.0	0.3
01Jan2000	06:00	0.3	0.2	1.3	1.0	0.3
01Jan2000	06:01	0.2	0.2	1.3	1.0	0.2
01Jan2000	06:02	0.2	0.2	1.3	1.0	0.2
01Jan2000	06:03	0.1	0.1	1.3	0.9	0.1
01Jan2000	06:04	0.1	0.1	1.2	0.9	0.1
01Jan2000	06:05	0.0	0.1	1.2	0.9	0.0



- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

BASIN D- PROPOSED DETENTION 28				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
991	0	4548	0.10	0.000
993	2	5779	0.13	0.237
995	4	6807	0.16	0.521



**NEWLAND SIERRA
BASIN D - PROPOSED DETENTION BASINS
CAMINO MAYOR BASIN
DETENTION 28 (BMP CM4)**

APPENDIX B

Proposed Detention Storage Analysis

SUB-BASIN 29

Node to Node		Code	Elev 1 (feet)	Elev 2 (feet)	Length (feet)	C Factor	Area (ac.)	Comments	BANK		
									1	2	3
2916	2915.2	2	1485	1483	80	0.9	0.27				
2915.2	2915	5	1483	1475	120			valley			
2915.2	2915	8				0.9	0.30				
2915	2917	3	1469	1460	60			WQ outlet			
2917	2914.15	5	1460	1410	170			mtn			
2917	2914.15	8				0.35	3.21				
2914.15	2914.15	1						1 of 2			
2919.5	2919	2	1664	1640	85	0.35	0.04				
2919	2918	5	1640	1420	690			mtn			
2919	2918	8				0.35	2.36				
2918	2914.15	3	1420	1410	60						
2914.15	2914.15	1						2 of 2			
2914.15	2914	3	1410	1405	35						
2914	2914	1						1 of 2			
2914.3	2914.2	2	1484	1477	70	0.9	0.06				
2914.2	2914.1	6	1477	1408	425	0.9	0.39				
2914.1	2914	3	1406	1405	40						
2914	2914	1						2 of 2 WQ outlet			
2914	2913	3	1399	1398	50						
2913	2912	5	1398	1290	575			mtn			
2913	2912	8				0.35	4.69				
2912	2911	5	1290	1025	1175			mtn			
2912	2911	8				0.43	19.17				
2911	2910	5	1025	835	830			mtn			
2911	2910	8				0.43	23.79				
2910	29	5	835	800	455			valley			
29	29	1						1 of 2			
2927	2926	2	1603	1570	100	0.35	0.19				
2926	2925	5	1570	1470	307			mtn			
2926	2925	8				0.35	1.15				
2925	2924	5	1470	1390	520			mtn			
2925	2924	8				0.35	6.88				
2924	2922	5	1390	1370	361			mtn			
2924	2922	8				0.35	9.30				
2922	2921	5	1370	1300	1235			mtn			
2922	2921	8				0.43	29.57				
2921	2920	5	1300	893	1300			mtn			
2921	2920	8				0.44	15.07				
2920	29	5	893	800	335			mtn			

RATIONAL METHOD HYDROLOGY COMPUTER PROGRAM PACKAGE

Reference: SAN DIEGO COUNTY FLOOD CONTROL DISTRICT

2003,1985,1981 HYDROLOGY MANUAL

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Ver. 21.0 Release Date: 06/01/2014 License ID 1355

Analysis prepared by:

Fuscoe Engineering
6390 Greenwich Drive
Suite 200
San Diego, CA 92122

***** DESCRIPTION OF STUDY *****

* NEWLAND SIERRA - PROPOSED HYDROLOGY *
* SUBBASIN # 29 *
* JANUARY 2017 *

FILE NAME: P-29.DAT

TIME/DATE OF STUDY: 14:29 01/27/2017

USER SPECIFIED HYDROLOGY AND HYDRAULIC MODEL INFORMATION:

2003 SAN DIEGO MANUAL CRITERIA

USER SPECIFIED STORM EVENT(YEAR) = 100.00

6-HOUR DURATION PRECIPITATION (INCHES) = 3.500

SPECIFIED MINIMUM PIPE SIZE(INCH) = 18.00

SPECIFIED PERCENT OF GRADIENTS(DECIMAL) TO USE FOR FRICTION SLOPE = 0.90

SAN DIEGO HYDROLOGY MANUAL "C"-VALUES USED FOR RATIONAL METHOD

NOTE: USE MODIFIED RATIONAL METHOD PROCEDURES FOR CONFLUENCE ANALYSIS

USER-DEFINED STREET-SECTIONS FOR COUPLED PIPEFLOW AND STREETFLOW MODEL

NO.	HALF- WIDTH (FT)	CROWN TO CROSSFALL (FT)	STREET-CROSSFALL: IN- / OUT- / PARK- SIDE / SIDE / WAY	CURB HEIGHT (FT)	GUTTER-GEOMETRIES: WIDTH LIP HIKE (FT) (FT) (FT)	MANNING FACTOR (n)
1	30.0	20.0	0.018/0.018/0.020	0.67	2.00 0.0312 0.167	0.0150

GLOBAL STREET FLOW-DEPTH CONSTRAINTS:

1. Relative Flow-Depth = 0.00 FEET

as (Maximum Allowable Street Flow Depth) - (Top-of-Curb)

2. (Depth)*(Velocity) Constraint = 6.0 (FT*FT/S)

*SIZE PIPE WITH A FLOW CAPACITY GREATER THAN

OR EQUAL TO THE UPSTREAM TRIBUTARY PIPE.*

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FLOW PROCESS FROM NODE 2916.00 TO NODE 2915.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 80.00

UPSTREAM ELEVATION(FEET) = 1485.00

DOWNSTREAM ELEVATION(FEET) = 1483.00

ELEVATION DIFFERENCE(FEET) = 2.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 2.373

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

SUBAREA RUNOFF(CFS) = 2.24

TOTAL AREA(ACRES) = 0.27 TOTAL RUNOFF(CFS) = 2.24

FLOW PROCESS FROM NODE 2915.20 TO NODE 2915.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1483.00 DOWNSTREAM(FEET) = 1475.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 120.00 CHANNEL SLOPE = 0.0667

CHANNEL FLOW THRU SUBAREA(CFS) = 2.24

FLOW VELOCITY(FEET/SEC) = 4.55 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.44 Tc(MIN.) = 2.81

LONGEST FLOWPATH FROM NODE 2916.00 TO NODE 2915.00 = 200.00 FEET.

FLOW PROCESS FROM NODE 2915.20 TO NODE 2915.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222

NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .9000

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.9000

SUBAREA AREA(ACRES) = 0.30 SUBAREA RUNOFF(CFS) = 2.49

TOTAL AREA(ACRES) = 0.6 TOTAL RUNOFF(CFS) = 4.73

TC(MIN.) = 2.81

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FLOW PROCESS FROM NODE 2915.00 TO NODE 2917.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1469.00 DOWNSTREAM(FEET) = 1460.00
FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.3 INCHES
PIPE-FLOW VELOCITY(FEET/SEC.) = 14.82
ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
PIPE-FLOW(CFS) = 4.73
PIPE TRAVEL TIME(MIN.) = 0.07 Tc(MIN.) = 2.88
LONGEST FLOWPATH FROM NODE 2916.00 TO NODE 2917.00 = 260.00 FEET.

FLOW PROCESS FROM NODE 2917.00 TO NODE 2914.15 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====

ELEVATION DATA: UPSTREAM(FEET) = 1460.00 DOWNSTREAM(FEET) = 1410.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 170.00 CHANNEL SLOPE = 0.2941
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1935 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 4.73
FLOW VELOCITY(FEET/SEC) = 4.13 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.69 Tc(MIN.) = 3.56
LONGEST FLOWPATH FROM NODE 2916.00 TO NODE 2914.15 = 430.00 FEET.

FLOW PROCESS FROM NODE 2917.00 TO NODE 2914.15 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4329
SUBAREA AREA(ACRES) = 3.21 SUBAREA RUNOFF(CFS) = 10.36
TOTAL AREA(ACRES) = 3.8 TOTAL RUNOFF(CFS) = 15.09
TC(MIN.) = 3.56

FLOW PROCESS FROM NODE 2914.15 TO NODE 2914.15 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

```
=====
TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
TIME OF CONCENTRATION(MIN.) = 3.56
RAINFALL INTENSITY(INCH/HR) = 9.22
TOTAL STREAM AREA(ACRES) = 3.78
PEAK FLOW RATE(CFS) AT CONFLUENCE = 15.09
```

FLOW PROCESS FROM NODE 2919.50 TO NODE 2919.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

```
=====
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
INITIAL SUBAREA FLOW-LENGTH(Feet) = 85.00
UPSTREAM ELEVATION(Feet) = 1664.00
DOWNSTREAM ELEVATION(Feet) = 1640.00
ELEVATION DIFFERENCE(Feet) = 24.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 5.778
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.401
SUBAREA RUNOFF(CFS) = 0.12
TOTAL AREA(ACRES) = 0.04 TOTAL RUNOFF(CFS) = 0.12
```

FLOW PROCESS FROM NODE 2919.00 TO NODE 2918.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<<

```
=====
ELEVATION DATA: UPSTREAM(Feet) = 1640.00 DOWNSTREAM(Feet) = 1420.00
CHANNEL LENGTH THRU SUBAREA(Feet) = 690.00 CHANNEL SLOPE = 0.3188
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1997 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.12
FLOW VELOCITY(Feet/Sec) = 2.50 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.60 Tc(MIN.) = 10.37
LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2918.00 = 775.00 FEET.
```

FLOW PROCESS FROM NODE 2919.00 TO NODE 2918.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

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100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.760
 *USER SPECIFIED(SUBAREA):
 RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500
 S.C.S. CURVE NUMBER (AMC II) = 0
 AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
 SUBAREA AREA(ACRES) = 2.36 SUBAREA RUNOFF(CFS) = 4.76
 TOTAL AREA(ACRES) = 2.4 TOTAL RUNOFF(CFS) = 4.84
 TC(MIN.) = 10.37

FLOW PROCESS FROM NODE 2918.00 TO NODE 1914.15 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<
 >>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1420.00 DOWNSTREAM(FEET) = 1410.00
 FLOW LENGTH(FEET) = 60.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 4.2 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 15.48
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 4.84
 PIPE TRAVEL TIME(MIN.) = 0.06 Tc(MIN.) = 10.44
 LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 1914.15 = 835.00 FEET.

FLOW PROCESS FROM NODE 2914.15 TO NODE 2914.15 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<
 >>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 10.44
 RAINFALL INTENSITY(INCH/HR) = 5.74
 TOTAL STREAM AREA(ACRES) = 2.40
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 4.84

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	15.09	3.56	9.222	3.78
2	4.84	10.44	5.737	2.40

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

P-29.TXT

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	16.74	3.56	9.222
2	14.23	10.44	5.737

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 16.74 Tc(MIN.) = 3.56
 TOTAL AREA(ACRES) = 6.2
 LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2914.15 = 835.00 FEET.

FLOW PROCESS FROM NODE 2914.15 TO NODE 2914.00 IS CODE = 31

>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1410.00 DOWNSTREAM(FEET) = 1405.00
 FLOW LENGTH(FEET) = 35.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 8.4 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 20.69
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 16.74
 PIPE TRAVEL TIME(MIN.) = 0.03 Tc(MIN.) = 3.59
 LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2914.00 = 870.00 FEET.

FLOW PROCESS FROM NODE 2914.00 TO NODE 2914.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:
 TIME OF CONCENTRATION(MIN.) = 3.59
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 6.18
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 16.74

FLOW PROCESS FROM NODE 2914.30 TO NODE 2914.20 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<<

=====

*USER SPECIFIED(SUBAREA):
 RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .9000
 S.C.S. CURVE NUMBER (AMC II) = 0
 INITIAL SUBAREA FLOW-LENGTH(FEET) = 70.00
 UPSTREAM ELEVATION(FEET) = 1484.00

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DOWNSTREAM ELEVATION(FEET) = 1477.00
ELEVATION DIFFERENCE(FEET) = 7.00
SUBAREA OVERLAND TIME OF FLOW(MIN.) = 1.398
WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.
SUBAREA RUNOFF(CFS) = 0.50
TOTAL AREA(ACRES) = 0.06 TOTAL RUNOFF(CFS) = 0.50

FLOW PROCESS FROM NODE 2914.20 TO NODE 2914.10 IS CODE = 62

>>>>COMPUTE STREET FLOW TRAVEL TIME THRU SUBAREA<<<<<
>>>>(STREET TABLE SECTION # 1 USED)<<<<<
=====

UPSTREAM ELEVATION(FEET) = 1477.00 DOWNSTREAM ELEVATION(FEET) = 1408.00
STREET LENGTH(FEET) = 425.00 CURB HEIGHT(INCHES) = 8.0
STREET HALFWIDTH(FEET) = 30.00

DISTANCE FROM CROWN TO CROSSFALL GRADEBREAK(FEET) = 20.00
INSIDE STREET CROSSFALL(DECIMAL) = 0.018
OUTSIDE STREET CROSSFALL(DECIMAL) = 0.018

SPECIFIED NUMBER OF HALFSTREETS CARRYING RUNOFF = 2
STREET PARKWAY CROSSFALL(DECIMAL) = 0.020
Manning's FRICTION FACTOR for Streetflow Section(curbs-to-curbs) = 0.0150
Manning's FRICTION FACTOR for Back-of-Walk Flow Section = 0.0200

**TRAVEL TIME COMPUTED USING ESTIMATED FLOW(CFS) = 2.12
STREETFLOW MODEL RESULTS USING ESTIMATED FLOW:
STREET FLOW DEPTH(FEET) = 0.20
HALFSTREET FLOOD WIDTH(FEET) = 2.00
AVERAGE FLOW VELOCITY(FEET/SEC.) = 8.75
PRODUCT OF DEPTH&VELOCITY(FT*FT/SEC.) = 1.73
STREET FLOW TRAVEL TIME(MIN.) = 0.81 Tc(MIN.) = 2.21
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 9.222
NOTE: RAINFALL INTENSITY IS BASED ON Tc = 5-MINUTE.

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .9000
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.900
SUBAREA AREA(ACRES) = 0.39 SUBAREA RUNOFF(CFS) = 3.24
TOTAL AREA(ACRES) = 0.4 PEAK FLOW RATE(CFS) = 3.73

END OF SUBAREA STREET FLOW HYDRAULICS:

DEPTH(FEET) = 0.20 HALFSTREET FLOOD WIDTH(FEET) = 2.00
FLOW VELOCITY(FEET/SEC.) = 8.75 DEPTH*VELOCITY(FT*FT/SEC.) = 1.73
LONGEST FLOWPATH FROM NODE 2914.30 TO NODE 2914.10 = 495.00 FEET.

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FLOW PROCESS FROM NODE 2914.10 TO NODE 2914.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1406.00 DOWNSTREAM(FEET) = 1405.00
 FLOW LENGTH(FEET) = 40.00 MANNING'S N = 0.013
 ESTIMATED PIPE DIAMETER(INCH) INCREASED TO 18.000
 DEPTH OF FLOW IN 18.0 INCH PIPE IS 6.0 INCHES
 PIPE-FLOW VELOCITY(FEET/SEC.) = 7.30
 ESTIMATED PIPE DIAMETER(INCH) = 18.00 NUMBER OF PIPES = 1
 PIPE-FLOW(CFS) = 3.73
 PIPE TRAVEL TIME(MIN.) = 0.09 Tc(MIN.) = 2.30
 LONGEST FLOWPATH FROM NODE 2914.30 TO NODE 2914.00 = 535.00 FEET.

FLOW PROCESS FROM NODE 2914.00 TO NODE 2914.00 IS CODE = 1

>>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<<

>>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<<

=====

TOTAL NUMBER OF STREAMS = 2
 CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
 TIME OF CONCENTRATION(MIN.) = 2.30
 RAINFALL INTENSITY(INCH/HR) = 9.22
 TOTAL STREAM AREA(ACRES) = 0.45
 PEAK FLOW RATE(CFS) AT CONFLUENCE = 3.73

** CONFLUENCE DATA **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	16.74	3.59	9.222	6.18
2	3.73	2.30	9.222	0.45

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
 CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	20.48	2.30	9.222
2	20.48	3.59	9.222

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 20.48 Tc(MIN.) = 3.59
 TOTAL AREA(ACRES) = 6.6

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LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2914.00 = 870.00 FEET.

FLOW PROCESS FROM NODE 2914.00 TO NODE 2913.00 IS CODE = 31

>>>>>COMPUTE PIPE-FLOW TRAVEL TIME THRU SUBAREA<<<<<

>>>>>USING COMPUTER-ESTIMATED PIPESIZE (NON-PRESSURE FLOW)<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1399.00 DOWNSTREAM(FEET) = 1398.00

FLOW LENGTH(FEET) = 50.00 MANNING'S N = 0.013

DEPTH OF FLOW IN 21.0 INCH PIPE IS 16.6 INCHES

PIPE-FLOW VELOCITY(FEET/SEC.) = 10.07

ESTIMATED PIPE DIAMETER(INCH) = 21.00 NUMBER OF PIPES = 1

PIPE-FLOW(CFS) = 20.48

PIPE TRAVEL TIME(MIN.) = 0.08 Tc(MIN.) = 3.68

LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2913.00 = 920.00 FEET.

FLOW PROCESS FROM NODE 2913.00 TO NODE 2912.00 IS CODE = 53

>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<

>>>>>TRAVELTIME THRU SUBAREA<<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1398.00 DOWNSTREAM(FEET) = 1290.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 575.00 CHANNEL SLOPE = 0.1878

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .1539 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 20.48

FLOW VELOCITY(FEET/SEC) = 6.00 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 1.60 Tc(MIN.) = 5.27

LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2912.00 = 1495.00 FEET.

FLOW PROCESS FROM NODE 2913.00 TO NODE 2912.00 IS CODE = 81

>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 8.912

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3996

SUBAREA AREA(ACRES) = 4.69 SUBAREA RUNOFF(CFS) = 14.63

TOTAL AREA(ACRES) = 11.3 TOTAL RUNOFF(CFS) = 40.31

TC(MIN.) = 5.27

FLOW PROCESS FROM NODE 2912.00 TO NODE 2911.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1290.00 DOWNSTREAM(FEET) = 1025.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1175.00 CHANNEL SLOPE = 0.2255
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1718 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 40.31
FLOW VELOCITY(FEET/SEC) = 7.95 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.46 Tc(MIN.) = 7.74
LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2911.00 = 2670.00 FEET.

FLOW PROCESS FROM NODE 2912.00 TO NODE 2911.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.959
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .4300
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4187
SUBAREA AREA(ACRES) = 19.17 SUBAREA RUNOFF(CFS) = 57.37
TOTAL AREA(ACRES) = 30.5 TOTAL RUNOFF(CFS) = 88.84
TC(MIN.) = 7.74

FLOW PROCESS FROM NODE 2911.00 TO NODE 2910.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<
>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 1025.00 DOWNSTREAM(FEET) = 835.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 830.00 CHANNEL SLOPE = 0.2289
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1730 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 88.84
FLOW VELOCITY(FEET/SEC) = 10.38 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 1.33 Tc(MIN.) = 9.07
LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 2910.00 = 3500.00 FEET.

FLOW PROCESS FROM NODE 2911.00 TO NODE 2910.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.281

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*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .4300

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.4237

SUBAREA AREA(ACRES) = 23.79 SUBAREA RUNOFF(CFS) = 64.25

TOTAL AREA(ACRES) = 54.3 TOTAL RUNOFF(CFS) = 144.44

TC(MIN.) = 9.07

FLOW PROCESS FROM NODE 2910.00 TO NODE 29.00 IS CODE = 52

>>>>COMPUTE NATURAL VALLEY CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

ELEVATION DATA: UPSTREAM(FEET) = 835.00 DOWNSTREAM(FEET) = 800.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 455.00 CHANNEL SLOPE = 0.0769

CHANNEL FLOW THRU SUBAREA(CFS) = 144.44

FLOW VELOCITY(FEET/SEC) = 14.72 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 0.52 Tc(MIN.) = 9.58

LONGEST FLOWPATH FROM NODE 2919.50 TO NODE 29.00 = 3955.00 FEET.

FLOW PROCESS FROM NODE 29.00 TO NODE 29.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

TOTAL NUMBER OF STREAMS = 2

CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 1 ARE:

TIME OF CONCENTRATION(MIN.) = 9.58

RAINFALL INTENSITY(INCH/HR) = 6.06

TOTAL STREAM AREA(ACRES) = 54.28

PEAK FLOW RATE(CFS) AT CONFLUENCE = 144.44

FLOW PROCESS FROM NODE 2927.00 TO NODE 2926.00 IS CODE = 21

>>>>RATIONAL METHOD INITIAL SUBAREA ANALYSIS<<<<

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

INITIAL SUBAREA FLOW-LENGTH(FEET) = 100.00

UPSTREAM ELEVATION(FEET) = 1603.00

DOWNSTREAM ELEVATION(FEET) = 1570.00

ELEVATION DIFFERENCE(FEET) = 33.00

SUBAREA OVERLAND TIME OF FLOW(MIN.) = 6.267

WARNING: THE MAXIMUM OVERLAND FLOW SLOPE, 10.%, IS USED IN Tc CALCULATION!

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 7.972

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SUBAREA RUNOFF(CFS) = 0.53
TOTAL AREA(ACRES) = 0.19 TOTAL RUNOFF(CFS) = 0.53

FLOW PROCESS FROM NODE 2926.00 TO NODE 2925.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1570.00 DOWNSTREAM(FEET) = 1470.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 307.00 CHANNEL SLOPE = 0.3257
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .2010 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
NOTE: CHANNEL FLOW OF 1. CFS WAS ASSUMED IN VELOCITY ESTIMATION
CHANNEL FLOW THRU SUBAREA(CFS) = 0.53
FLOW VELOCITY(FEET/SEC) = 2.51 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.04 Tc(MIN.) = 8.30
LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 2925.00 = 407.00 FEET.

FLOW PROCESS FROM NODE 2926.00 TO NODE 2925.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 6.648
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500
SUBAREA AREA(ACRES) = 1.15 SUBAREA RUNOFF(CFS) = 2.68
TOTAL AREA(ACRES) = 1.3 TOTAL RUNOFF(CFS) = 3.12
TC(MIN.) = 8.30

FLOW PROCESS FROM NODE 2925.00 TO NODE 2924.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1470.00 DOWNSTREAM(FEET) = 1390.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 520.00 CHANNEL SLOPE = 0.1538
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1369 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 3.12
FLOW VELOCITY(FEET/SEC) = 3.03 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.86 Tc(MIN.) = 11.17
LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 2924.00 = 927.00 FEET.

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FLOW PROCESS FROM NODE 2925.00 TO NODE 2924.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 5.491

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 6.88 SUBAREA RUNOFF(CFS) = 13.22

TOTAL AREA(ACRES) = 8.2 TOTAL RUNOFF(CFS) = 15.80

TC(MIN.) = 11.17

FLOW PROCESS FROM NODE 2924.00 TO NODE 2922.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 1390.00 DOWNSTREAM(FEET) = 1370.00

CHANNEL LENGTH THRU SUBAREA(FEET) = 361.00 CHANNEL SLOPE = 0.0554

SLOPE ADJUSTMENT CURVE USED:

EFFECTIVE SLOPE = .0554 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

CHANNEL FLOW THRU SUBAREA(CFS) = 15.80

FLOW VELOCITY(FEET/SEC) = 3.30 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)

TRAVEL TIME(MIN.) = 1.82 Tc(MIN.) = 12.99

LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 2922.00 = 1288.00 FEET.

FLOW PROCESS FROM NODE 2924.00 TO NODE 2922.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.982

*USER SPECIFIED(SUBAREA):

RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .3500

S.C.S. CURVE NUMBER (AMC II) = 0

AREA-AVERAGE RUNOFF COEFFICIENT = 0.3500

SUBAREA AREA(ACRES) = 9.30 SUBAREA RUNOFF(CFS) = 16.22

TOTAL AREA(ACRES) = 17.5 TOTAL RUNOFF(CFS) = 30.55

TC(MIN.) = 12.99

FLOW PROCESS FROM NODE 2922.00 TO NODE 2921.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

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```
=====
ELEVATION DATA: UPSTREAM(FEET) = 1370.00 DOWNSTREAM(FEET) = 1300.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1235.00 CHANNEL SLOPE = 0.0567
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .0567 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 30.55
FLOW VELOCITY(FEET/SEC) = 4.16 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 4.94 Tc(MIN.) = 17.93
LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 2921.00 = 2523.00 FEET.
```

```
FLOW PROCESS FROM NODE 2922.00 TO NODE 2921.00 IS CODE = 81
```

```
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 4.046
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .4300
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4002
SUBAREA AREA(ACRES) = 29.57 SUBAREA RUNOFF(CFS) = 51.44
TOTAL AREA(ACRES) = 47.1 TOTAL RUNOFF(CFS) = 76.25
TC(MIN.) = 17.93
```

```
FLOW PROCESS FROM NODE 2921.00 TO NODE 2920.00 IS CODE = 53
```

```
-----
>>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<<
>>>>>TRAVELTIME THRU SUBAREA<<<<<
=====
```

```
ELEVATION DATA: UPSTREAM(FEET) = 1300.00 DOWNSTREAM(FEET) = 893.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 1300.00 CHANNEL SLOPE = 0.3131
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1983 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 76.25
FLOW VELOCITY(FEET/SEC) = 10.56 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 2.05 Tc(MIN.) = 19.99
LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 2920.00 = 3823.00 FEET.
```

```
FLOW PROCESS FROM NODE 2921.00 TO NODE 2920.00 IS CODE = 81
```

```
-----
>>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<<
=====
```

```
100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.773
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .4400
S.C.S. CURVE NUMBER (AMC II) = 0
```

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AREA-AVERAGE RUNOFF COEFFICIENT = 0.4099
SUBAREA AREA(ACRES) = 15.07 SUBAREA RUNOFF(CFS) = 25.02
TOTAL AREA(ACRES) = 62.2 TOTAL RUNOFF(CFS) = 96.13
TC(MIN.) = 19.99

FLOW PROCESS FROM NODE 2920.00 TO NODE 29.00 IS CODE = 53

>>>>COMPUTE NATURAL MOUNTAIN CHANNEL FLOW<<<<

>>>>TRAVELTIME THRU SUBAREA<<<<

=====

ELEVATION DATA: UPSTREAM(FEET) = 893.00 DOWNSTREAM(FEET) = 800.00
CHANNEL LENGTH THRU SUBAREA(FEET) = 335.00 CHANNEL SLOPE = 0.2776
SLOPE ADJUSTMENT CURVE USED:
EFFECTIVE SLOPE = .1892 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
CHANNEL FLOW THRU SUBAREA(CFS) = 96.13
FLOW VELOCITY(FEET/SEC) = 11.14 (PER LACFCD/RCFC&WCD HYDROLOGY MANUAL)
TRAVEL TIME(MIN.) = 0.50 Tc(MIN.) = 20.49
LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 29.00 = 4158.00 FEET.

FLOW PROCESS FROM NODE 2920.00 TO NODE 29.00 IS CODE = 81

>>>>ADDITION OF SUBAREA TO MAINLINE PEAK FLOW<<<<

=====

100 YEAR RAINFALL INTENSITY(INCH/HOUR) = 3.713
*USER SPECIFIED(SUBAREA):
RESIDENTIAL (7.3 DU/AC OR LESS) RUNOFF COEFFICIENT = .4600
S.C.S. CURVE NUMBER (AMC II) = 0
AREA-AVERAGE RUNOFF COEFFICIENT = 0.4251
SUBAREA AREA(ACRES) = 27.04 SUBAREA RUNOFF(CFS) = 46.19
TOTAL AREA(ACRES) = 89.2 TOTAL RUNOFF(CFS) = 140.79
TC(MIN.) = 20.49

FLOW PROCESS FROM NODE 29.00 TO NODE 29.00 IS CODE = 1

>>>>DESIGNATE INDEPENDENT STREAM FOR CONFLUENCE<<<<

>>>>AND COMPUTE VARIOUS CONFLUENCED STREAM VALUES<<<<

=====

TOTAL NUMBER OF STREAMS = 2
CONFLUENCE VALUES USED FOR INDEPENDENT STREAM 2 ARE:
TIME OF CONCENTRATION(MIN.) = 20.49
RAINFALL INTENSITY(INCH/HR) = 3.71
TOTAL STREAM AREA(ACRES) = 89.20
PEAK FLOW RATE(CFS) AT CONFLUENCE = 140.79

** CONFLUENCE DATA **

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STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)	AREA (ACRE)
1	144.44	9.58	6.061	54.28
2	140.79	20.49	3.713	89.20

RAINFALL INTENSITY AND TIME OF CONCENTRATION RATIO
CONFLUENCE FORMULA USED FOR 2 STREAMS.

** PEAK FLOW RATE TABLE **

STREAM NUMBER	RUNOFF (CFS)	Tc (MIN.)	INTENSITY (INCH/HOUR)
1	210.30	9.58	6.061
2	229.27	20.49	3.713

COMPUTED CONFLUENCE ESTIMATES ARE AS FOLLOWS:

PEAK FLOW RATE(CFS) = 229.27 Tc(MIN.) = 20.49

TOTAL AREA(ACRES) = 143.5

LONGEST FLOWPATH FROM NODE 2927.00 TO NODE 29.00 = 4158.00 FEET.

=====

END OF STUDY SUMMARY:

TOTAL AREA(ACRES) = 143.5 TC(MIN.) = 20.49

PEAK FLOW RATE(CFS) = 229.27

=====

=====

END OF RATIONAL METHOD ANALYSIS



Basin 29

Detention at node 2915

RATIONAL METHOD HYDROGRAPH PROGRAM

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RUN DATE 1/30/2017

TIME OF CONCENTRATION 5 MIN.

6 HOUR RAINFALL 3.5 INCHES

BASIN AREA 0.57 ACRES

RUNOFF COEFFICIENT 0.9

PEAK DISCHARGE 4.73 CFS

TIME (MIN) = 0 DISCHARGE (CFS) = 0

TIME (MIN) = 5 DISCHARGE (CFS) = 0.1

TIME (MIN) = 10 DISCHARGE (CFS) = 0.1

TIME (MIN) = 15 DISCHARGE (CFS) = 0.1

TIME (MIN) = 20 DISCHARGE (CFS) = 0.1

TIME (MIN) = 25 DISCHARGE (CFS) = 0.1

TIME (MIN) = 30 DISCHARGE (CFS) = 0.1

TIME (MIN) = 35 DISCHARGE (CFS) = 0.1

TIME (MIN) = 40 DISCHARGE (CFS) = 0.1

TIME (MIN) = 45 DISCHARGE (CFS) = 0.1

TIME (MIN) = 50 DISCHARGE (CFS) = 0.1

TIME (MIN) = 55 DISCHARGE (CFS) = 0.1

TIME (MIN) = 60 DISCHARGE (CFS) = 0.1

TIME (MIN) = 65 DISCHARGE (CFS) = 0.1

TIME (MIN) = 70 DISCHARGE (CFS) = 0.1

TIME (MIN) = 75 DISCHARGE (CFS) = 0.1

TIME (MIN) = 80 DISCHARGE (CFS) = 0.1
TIME (MIN) = 85 DISCHARGE (CFS) = 0.1
TIME (MIN) = 90 DISCHARGE (CFS) = 0.1
TIME (MIN) = 95 DISCHARGE (CFS) = 0.1
TIME (MIN) = 100 DISCHARGE (CFS) = 0.1
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TIME (MIN) = 210 DISCHARGE (CFS) = 0.4
TIME (MIN) = 215 DISCHARGE (CFS) = 0.4
TIME (MIN) = 220 DISCHARGE (CFS) = 0.5

TIME (MIN) = 225 DISCHARGE (CFS) = 0.6
TIME (MIN) = 230 DISCHARGE (CFS) = 0.6
TIME (MIN) = 235 DISCHARGE (CFS) = 0.9
TIME (MIN) = 240 DISCHARGE (CFS) = 1.3
TIME (MIN) = 245 DISCHARGE (CFS) = 4.73
TIME (MIN) = 250 DISCHARGE (CFS) = 0.8
TIME (MIN) = 255 DISCHARGE (CFS) = 0.5
TIME (MIN) = 260 DISCHARGE (CFS) = 0.4
TIME (MIN) = 265 DISCHARGE (CFS) = 0.3
TIME (MIN) = 270 DISCHARGE (CFS) = 0.3
TIME (MIN) = 275 DISCHARGE (CFS) = 0.3
TIME (MIN) = 280 DISCHARGE (CFS) = 0.2
TIME (MIN) = 285 DISCHARGE (CFS) = 0.2
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TIME (MIN) = 345 DISCHARGE (CFS) = 0.1
TIME (MIN) = 350 DISCHARGE (CFS) = 0.1
TIME (MIN) = 355 DISCHARGE (CFS) = 0.1
TIME (MIN) = 360 DISCHARGE (CFS) = 0.1
TIME (MIN) = 365 DISCHARGE (CFS) = 0

Detention 29 Proposed

HEC-HMS Input

The screenshot displays the HEC-HMS software interface. The top section shows a hierarchical tree view of the project components. The 'Basin Inflow' element is selected and highlighted in blue. Below the tree view, there are three tabs: 'Components', 'Compute', and 'Results'. The 'Components' tab is active, showing the configuration for the selected 'Basin Inflow' element. The configuration panel includes fields for 'Basin Name', 'Element Name', 'Description', 'Downstream', 'Area (MI2)', and 'Flow Method'.

Detention 29

- Basin Models
 - Basin 29
 - Basin Inflow**
 - Discharge Gage
 - Detention Basin 29
 - Outlets
 - Outlet 1
- Meteorologic Models
 - Sierra
- Control Specifications
 - Control 1
- Time-Series Data
 - Discharge Gages
 - Node 2915 Inflow
 - 01Jan2000, 00:00 - 01Jan2000, 06:05
- Paired Data
 - Elevation-Storage Functions
 - Basin 29 Stage-Storage

Components Compute Results

Source Inflow Options

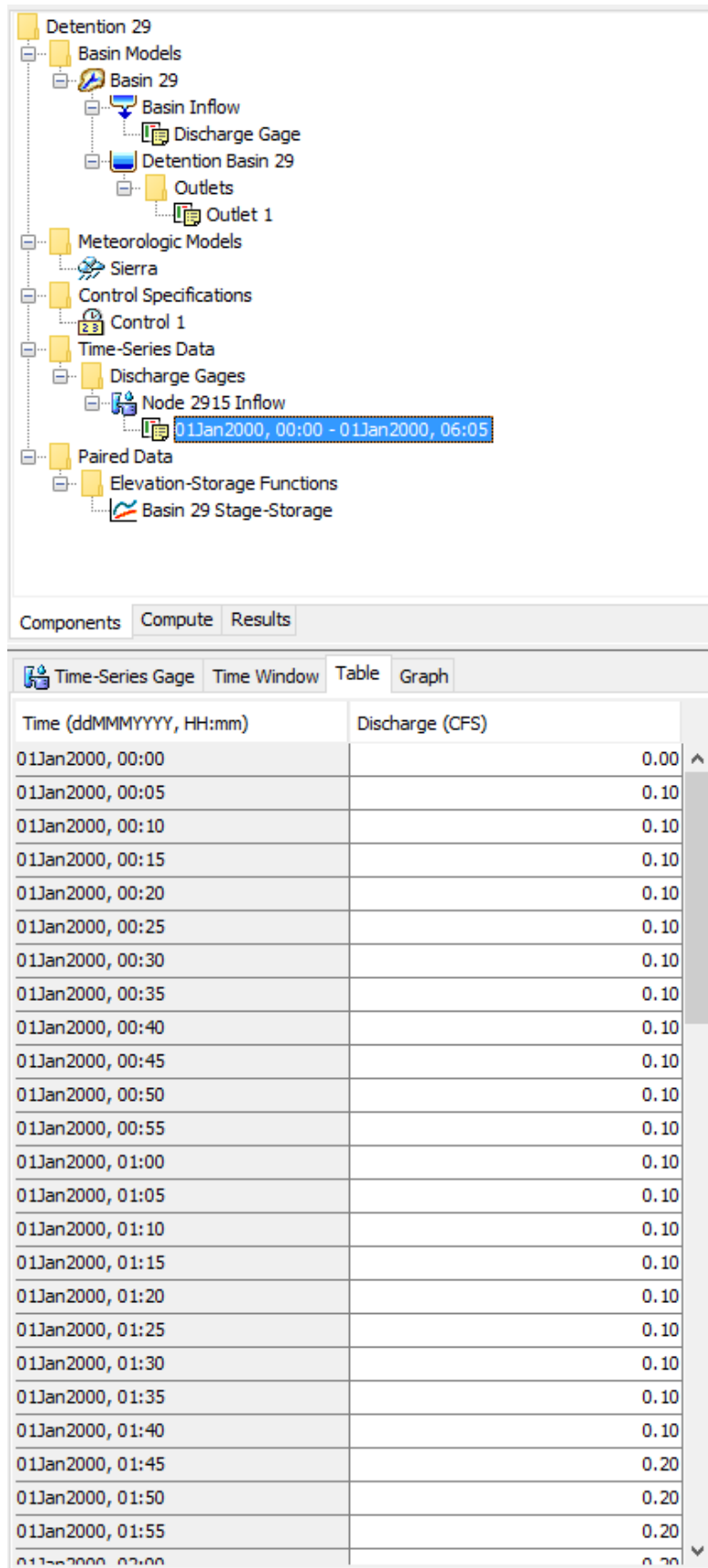
Basin Name: Basin 29
Element Name: Basin Inflow

Description: Node 2915

Downstream: Detention Basin 29

Area (MI2) 0.0009

Flow Method: Discharge Gage



Detention 29

Basin Models

Basin 29

Basin Inflow

Discharge Gage

Detention Basin 29

Outlets

Outlet 1

Meteorologic Models

Sierra

Control Specifications

Control 1

Time-Series Data

Discharge Gages

Node 2915 Inflow

01Jan2000, 00:00 - 01Jan2000, 06:05

Paired Data

Elevation-Storage Functions

Basin 29 Stage-Storage

Components

Compute

Results

Paired Data

Table

Graph

Elevation (FT)	Storage (AC-FT)
0.0	0.000
1.0	0.029
2.0	0.074
3.0	0.137
4.0	0.169

Project: Detention 29 Simulation Run: Run 1
Reservoir: Detention Basin 29

Start of Run:	01Jan2000, 00:00	Basin Model:	Basin 29
End of Run:	01Jan2000, 06:05	Meteorologic Model:	Sierra
Compute Time:	30Jan2017, 15:04:42	Control Specifications:	Control 1

Volume Units: AC-FT

Computed Results

Peak Inflow:	4.7 (CFS)	Date/Time of Peak Inflow:	01Jan2000, 04:05
Peak Discharge:	0.3 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:24
Inflow Volume:	0.1 (AC-FT)	Peak Storage:	0.1 (AC-FT)
Discharge Volume:	0.1 (AC-FT)	Peak Elevation:	2.1 (FT)

Observed Hydrograph at Gage Node 2915 Inflow

Peak Discharge:	4.7 (CFS)	Date/Time of Peak Discharge:	01Jan2000, 04:05
Mean Abs Error:	0.2 (CFS)	RMS Error:	0.5 (CFS)
Volume:	0.1 (AC-FT)	Volume Residual:	-0.1 (AC-FT)
Nash-Sutcliffe:	0.011		

Project: Detention 29 Simulation Run: Run 1
Reservoir: Detention Basin 29

Start of Run: 01Jan2000, 00:00 Basin Model: Basin 29
End of Run: 01Jan2000, 06:05 Meteorologic Model: Sierra
Compute Time: 30Jan2017, 15:04:42 Control Specifications: Control 1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:00	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:01	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:02	0.0	0.0	0.0	0.0	0.0
01Jan2000	00:03	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:04	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:05	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:06	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:07	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:08	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:09	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:10	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:11	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:12	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:13	0.1	0.0	0.0	0.0	0.1
01Jan2000	00:14	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:15	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:16	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:17	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:18	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:19	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:20	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:21	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:22	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:23	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:24	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:25	0.1	0.0	0.1	0.0	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:26	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:27	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:28	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:29	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:30	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:31	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:32	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:33	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:34	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:35	0.1	0.0	0.1	0.0	0.1
01Jan2000	00:36	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:37	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:38	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:39	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:40	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:41	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:42	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:43	0.1	0.0	0.2	0.0	0.1
01Jan2000	00:44	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:45	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:46	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:47	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:48	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:49	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:50	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:51	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:52	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:53	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:54	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:55	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:56	0.1	0.0	0.2	0.1	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	00:57	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:58	0.1	0.0	0.2	0.1	0.1
01Jan2000	00:59	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:00	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:01	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:02	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:03	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:04	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:05	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:06	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:07	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:08	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:09	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:10	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:11	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:12	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:13	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:14	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:15	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:16	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:17	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:18	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:19	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:20	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:21	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:22	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:23	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:24	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:25	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:26	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:27	0.1	0.0	0.2	0.1	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:28	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:29	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:30	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:31	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:32	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:33	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:34	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:35	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:36	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:37	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:38	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:39	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:40	0.1	0.0	0.2	0.1	0.1
01Jan2000	01:41	0.1	0.0	0.3	0.1	0.1
01Jan2000	01:42	0.1	0.0	0.3	0.1	0.1
01Jan2000	01:43	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:44	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:45	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:46	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:47	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:48	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:49	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:50	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:51	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:52	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:53	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:54	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:55	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:56	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:57	0.2	0.0	0.3	0.1	0.2
01Jan2000	01:58	0.2	0.0	0.3	0.1	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	01:59	0.2	0.0	0.3	0.1	0.2
01Jan2000	02:00	0.2	0.0	0.3	0.1	0.2
01Jan2000	02:01	0.2	0.0	0.3	0.1	0.2
01Jan2000	02:02	0.2	0.0	0.3	0.1	0.2
01Jan2000	02:03	0.2	0.0	0.3	0.1	0.2
01Jan2000	02:04	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:05	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:06	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:07	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:08	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:09	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:10	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:11	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:12	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:13	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:14	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:15	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:16	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:17	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:18	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:19	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:20	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:21	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:22	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:23	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:24	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:25	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:26	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:27	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:28	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:29	0.2	0.0	0.4	0.1	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	02:30	0.2	0.0	0.4	0.1	0.2
01Jan2000	02:31	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:32	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:33	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:34	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:35	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:36	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:37	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:38	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:39	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:40	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:41	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:42	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:43	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:44	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:45	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:46	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:47	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:48	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:49	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:50	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:51	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:52	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:53	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:54	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:55	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:56	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:57	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:58	0.2	0.0	0.5	0.1	0.2
01Jan2000	02:59	0.2	0.0	0.5	0.1	0.2
01Jan2000	03:00	0.2	0.0	0.5	0.1	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:01	0.2	0.0	0.5	0.2	0.2
01Jan2000	03:02	0.2	0.0	0.5	0.2	0.2
01Jan2000	03:03	0.3	0.0	0.5	0.2	0.3
01Jan2000	03:04	0.3	0.0	0.5	0.2	0.3
01Jan2000	03:05	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:06	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:07	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:08	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:09	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:10	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:11	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:12	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:13	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:14	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:15	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:16	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:17	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:18	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:19	0.3	0.0	0.6	0.2	0.3
01Jan2000	03:20	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:21	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:22	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:23	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:24	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:25	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:26	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:27	0.3	0.0	0.7	0.2	0.3
01Jan2000	03:28	0.4	0.0	0.7	0.2	0.4
01Jan2000	03:29	0.4	0.0	0.7	0.2	0.4
01Jan2000	03:30	0.4	0.0	0.7	0.2	0.4
01Jan2000	03:31	0.4	0.0	0.7	0.2	0.4

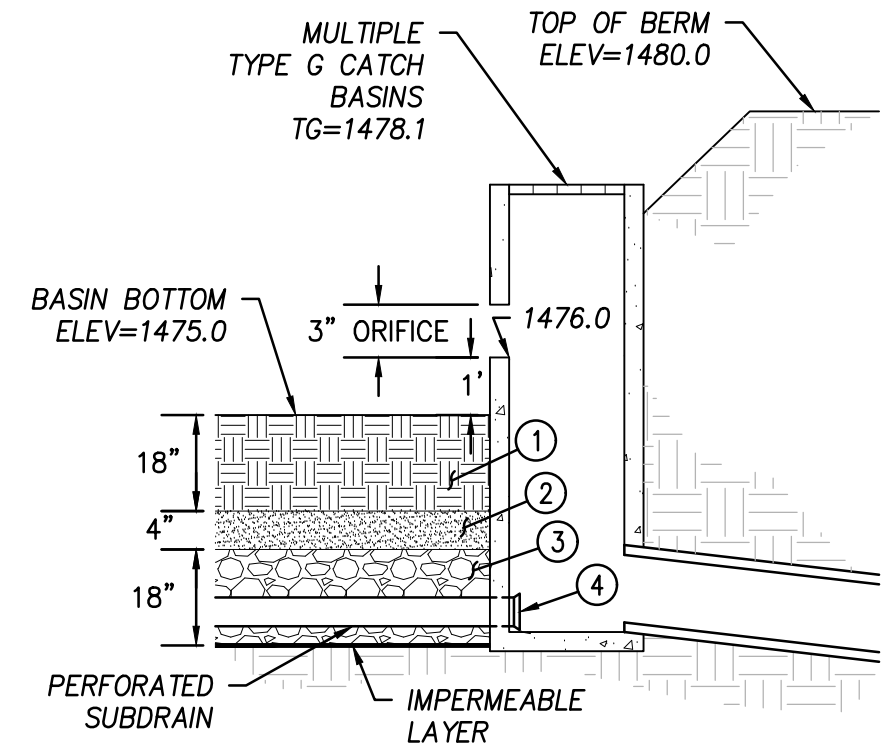
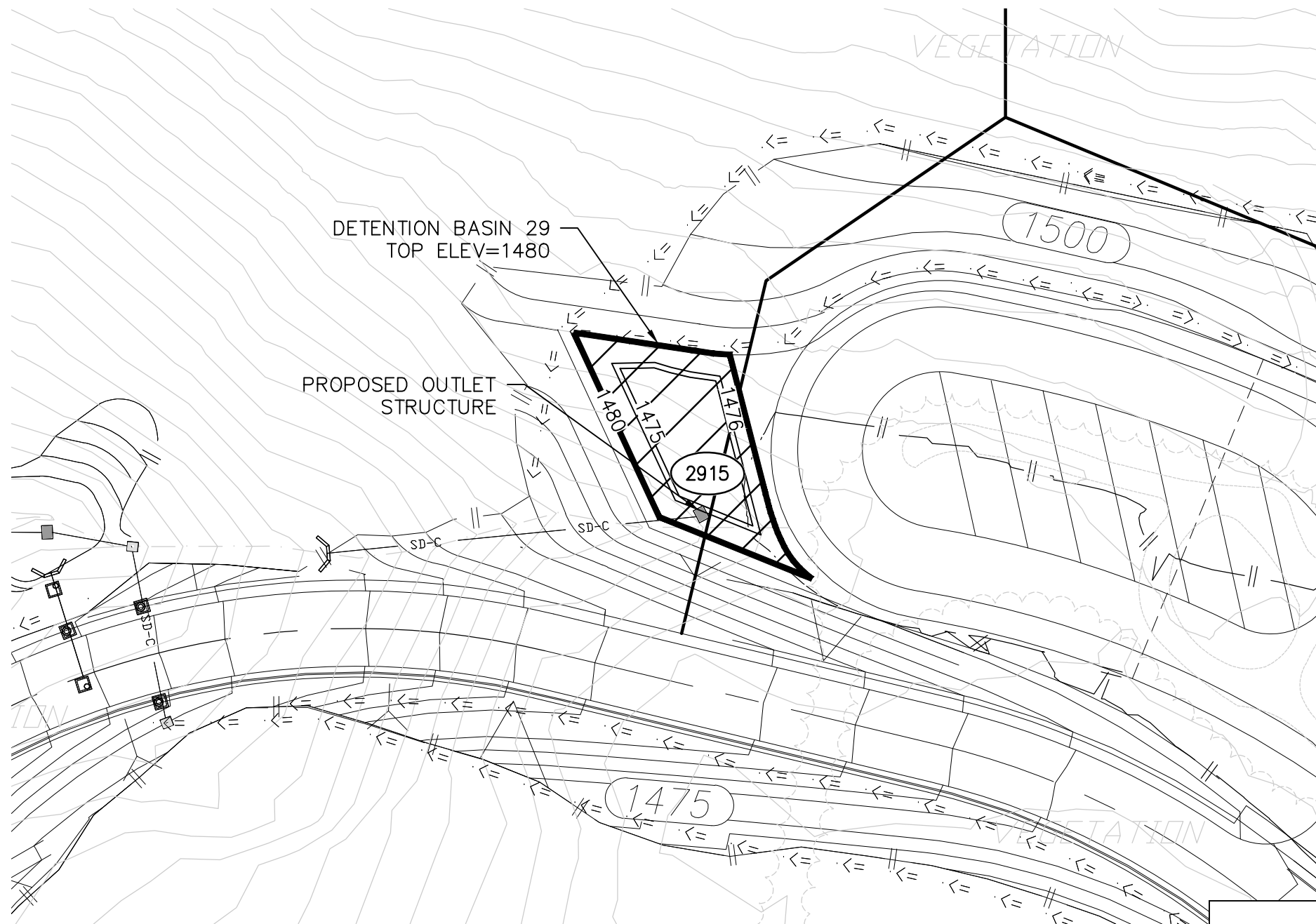
Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	03:32	0.4	0.0	0.7	0.2	0.4
01Jan2000	03:33	0.4	0.0	0.8	0.2	0.4
01Jan2000	03:34	0.4	0.0	0.8	0.2	0.4
01Jan2000	03:35	0.4	0.0	0.8	0.2	0.4
01Jan2000	03:36	0.4	0.0	0.8	0.2	0.4
01Jan2000	03:37	0.4	0.0	0.8	0.2	0.4
01Jan2000	03:38	0.5	0.0	0.8	0.2	0.5
01Jan2000	03:39	0.5	0.0	0.8	0.2	0.5
01Jan2000	03:40	0.5	0.0	0.8	0.2	0.5
01Jan2000	03:41	0.5	0.0	0.8	0.2	0.5
01Jan2000	03:42	0.5	0.0	0.9	0.2	0.5
01Jan2000	03:43	0.6	0.0	0.9	0.2	0.6
01Jan2000	03:44	0.6	0.0	0.9	0.2	0.6
01Jan2000	03:45	0.6	0.0	0.9	0.2	0.6
01Jan2000	03:46	0.6	0.0	0.9	0.2	0.6
01Jan2000	03:47	0.6	0.0	1.0	0.2	0.6
01Jan2000	03:48	0.6	0.0	1.0	0.2	0.6
01Jan2000	03:49	0.6	0.0	1.0	0.2	0.6
01Jan2000	03:50	0.6	0.0	1.0	0.2	0.6
01Jan2000	03:51	0.7	0.0	1.0	0.2	0.7
01Jan2000	03:52	0.7	0.0	1.0	0.2	0.7
01Jan2000	03:53	0.8	0.0	1.0	0.2	0.8
01Jan2000	03:54	0.8	0.0	1.1	0.2	0.8
01Jan2000	03:55	0.9	0.0	1.1	0.2	0.9
01Jan2000	03:56	1.0	0.0	1.1	0.2	1.0
01Jan2000	03:57	1.1	0.0	1.1	0.2	1.1
01Jan2000	03:58	1.1	0.0	1.2	0.2	1.1
01Jan2000	03:59	1.2	0.0	1.2	0.2	1.2
01Jan2000	04:00	1.3	0.0	1.2	0.2	1.3
01Jan2000	04:01	2.0	0.0	1.3	0.3	2.0
01Jan2000	04:02	2.7	0.0	1.3	0.3	2.7

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:03	3.4	0.0	1.4	0.3	3.4
01Jan2000	04:04	4.0	0.1	1.5	0.3	4.0
01Jan2000	04:05	4.7	0.1	1.6	0.3	4.7
01Jan2000	04:06	3.9	0.1	1.8	0.3	3.9
01Jan2000	04:07	3.2	0.1	1.9	0.3	3.2
01Jan2000	04:08	2.4	0.1	1.9	0.3	2.4
01Jan2000	04:09	1.6	0.1	2.0	0.3	1.6
01Jan2000	04:10	0.8	0.1	2.0	0.3	0.8
01Jan2000	04:11	0.7	0.1	2.0	0.3	0.7
01Jan2000	04:12	0.7	0.1	2.0	0.3	0.7
01Jan2000	04:13	0.6	0.1	2.0	0.3	0.6
01Jan2000	04:14	0.6	0.1	2.0	0.3	0.6
01Jan2000	04:15	0.5	0.1	2.0	0.3	0.5
01Jan2000	04:16	0.5	0.1	2.0	0.3	0.5
01Jan2000	04:17	0.5	0.1	2.1	0.3	0.5
01Jan2000	04:18	0.4	0.1	2.1	0.3	0.4
01Jan2000	04:19	0.4	0.1	2.1	0.3	0.4
01Jan2000	04:20	0.4	0.1	2.1	0.3	0.4
01Jan2000	04:21	0.4	0.1	2.1	0.3	0.4
01Jan2000	04:22	0.4	0.1	2.1	0.3	0.4
01Jan2000	04:23	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:24	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:25	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:26	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:27	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:28	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:29	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:30	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:31	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:32	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:33	0.3	0.1	2.1	0.3	0.3

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	04:34	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:35	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:36	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:37	0.3	0.1	2.1	0.3	0.3
01Jan2000	04:38	0.2	0.1	2.1	0.3	0.2
01Jan2000	04:39	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:40	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:41	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:42	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:43	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:44	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:45	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:46	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:47	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:48	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:49	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:50	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:51	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:52	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:53	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:54	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:55	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:56	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:57	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:58	0.2	0.1	2.0	0.3	0.2
01Jan2000	04:59	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:00	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:01	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:02	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:03	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:04	0.2	0.1	2.0	0.3	0.2

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:05	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:06	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:07	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:08	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:09	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:10	0.2	0.1	2.0	0.3	0.2
01Jan2000	05:11	0.2	0.1	1.9	0.3	0.2
01Jan2000	05:12	0.2	0.1	1.9	0.3	0.2
01Jan2000	05:13	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:14	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:15	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:16	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:17	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:18	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:19	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:20	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:21	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:22	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:23	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:24	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:25	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:26	0.1	0.1	1.9	0.3	0.1
01Jan2000	05:27	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:28	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:29	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:30	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:31	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:32	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:33	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:34	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:35	0.1	0.1	1.8	0.3	0.1

Date	Time	Inflow (CFS)	Storage (AC-FT)	Elevation (FT)	Outflow (CFS)	Obs Flow (CFS)
01Jan2000	05:36	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:37	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:38	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:39	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:40	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:41	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:42	0.1	0.1	1.8	0.3	0.1
01Jan2000	05:43	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:44	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:45	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:46	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:47	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:48	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:49	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:50	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:51	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:52	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:53	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:54	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:55	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:56	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:57	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:58	0.1	0.1	1.7	0.3	0.1
01Jan2000	05:59	0.1	0.1	1.7	0.3	0.1
01Jan2000	06:00	0.1	0.1	1.6	0.3	0.1
01Jan2000	06:01	0.1	0.1	1.6	0.3	0.1
01Jan2000	06:02	0.1	0.1	1.6	0.3	0.1
01Jan2000	06:03	0.0	0.1	1.6	0.3	0.0
01Jan2000	06:04	0.0	0.1	1.6	0.3	0.0
01Jan2000	06:05	0.0	0.1	1.6	0.3	0.0

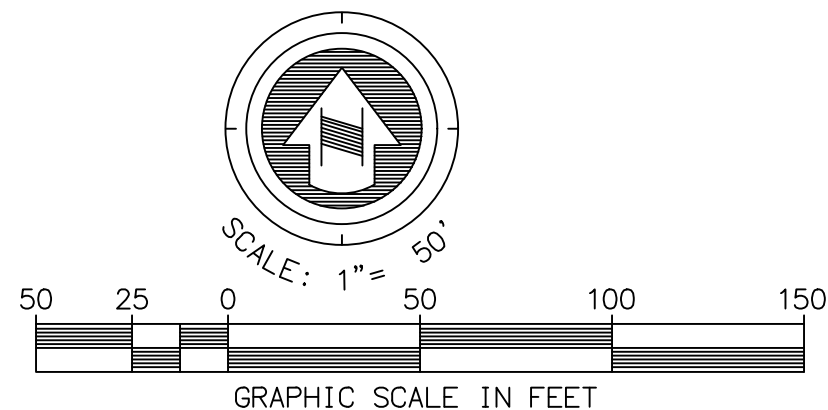


CONSTRUCTION NOTES:

- ① 18" BIORETENTION SOIL MEDIA
- ② 4" MEDIA BARRIER.
(2" WASHED SAND OVER 2" #8 STONE)
- ③ 18" DRAINAGE LAYER
(WASHED #57 STONE)
- ④ END CAP WITH ORIFICE
PER SWMP/HYDROMOD STUDY

PROPOSED OUTLET STRUCTURE
NOT TO SCALE

BASIN D - PROPOSED DETENTION 29 (BMP CM2)				
ELEVATION (FT)	DEPTH (FT)	CONTOUR AREA (SF)	CONTOUR AREA (AC)	STORAGE (AC-FT)
1476	0	1120	0.03	0.000
1477	1	1445	0.03	0.029
1478	2	1800	0.04	0.074
1479	3	2170	0.05	0.137
1480	4	2565	0.06	0.169



NEWLAND SIERRA
BASIN D - PROPOSED DETENTION BASINS
CAMINO MAYOR BASIN
DETENTION 29 (BMP CM2)